



University of Colorado  
Boulder

# Housing Master Plan

FINAL REPORT / AUGUST 2020



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# 01

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## Executive Summary

## Executive Summary

In early 2019, the University of Colorado Boulder (“CU Boulder” or the “University”) engaged the Project Team of Brailsford & Dunlavey, Inc. (“B&D”) and Ayers Saint Gross (“ASG”) to conduct a Housing Master Plan (“The Plan”) to guide the housing and resident support service needs of the University for the next 10 years and provide a framework for planning campus housing over the next 30 years.

The Plan assessed current housing offerings, analyzed preferences and satisfaction among the campus community, provided an understanding of options within the surrounding off-campus market, identified demand for new and/or renovated housing, and outlined the financial implications of implementing housing improvements. The Plan relied on input from a wide range of campus stakeholders along with qualitative and quantitative analyses to develop an appropriate long-term strategy. In total, over 5,700 CU Boulder students, faculty, and staff participated in the process through either focus group interviews, open house sessions, or Internet-based surveys.

The Project Team’s primary takeaways that informed a long-term housing strategy are as follows:

### Key Findings:

#### Existing Conditions

- With nearly 10,000 residents, CU Boulder provides a comprehensive and successful housing system with high occupancies, strong resident satisfaction levels, and a direct impact on student success.
- The inventory caters heavily to first-time freshmen (74% of residents) with a significant proportion of traditional-style, community bathroom units (71% of inventory) and limited unit type diversity to attract other cohort populations.

#### Housing Market

- Limited growth in upper-class residents in on-campus housing due to increasing freshman class sizes.
- Regional population growth has tightened the housing supply in the market and increased pressure on those desiring a residence near campus.
- Availability, quality, and affordability of housing has increasingly become a factor in recruitment and retention decisions of students, faculty, and staff.

## Demand

- Market demand suggests an opportunity to grow and diversify housing offerings for returning undergraduate students.
- Housing growth opportunities are more limited with graduate and family student housing at price points necessary to support new construction. The strategy for this population includes a combination of renovated and new housing options at various price points.
- Faculty and staff show high interest levels in any CU Boulder-sponsored housing programs and an opportunity exists for expanded transitional rental options among newer faculty members.
- Development sites exist to support CU Boulder's on-campus housing growth needs.

## Modernization

- The campus housing inventory is aging and will require significant reinvestment to maintain a consistent quality level across all CU Boulder housing. Main Campus residence halls and North of Boulder Creek apartments will require either substantial renovations or replacement.
- In addition to deferred maintenance issues, many residence halls lack the appropriate community and social spaces to foster engagement and student success desired by the housing program. Programmatic upgrades will need to be considered to address shortcomings.
- ADA accessibility deficiencies, especially with respect to apartments, must be addressed through renovations or new construction projects.

## Financial Strategy

- A holistic financial strategy must include revenue optimization, operating efficiencies, and proficient project delivery to support the institution's financial objectives.
- Capital projects must be evaluated based on their ability to support the financial health of the system.
- Continued reinvestment across all facilities must be aligned with the implementation plan to ensure ongoing maintenance and operational needs are accounted for.

## Scenario Planning:

In response to the findings of the Plan and strategic drivers for campus housing, the Project Team developed multiple planning scenarios to guide future development decisions.

**INITIAL DIRECTION:** The Project Team recommends the University prioritize a series of housing improvements to initiate the Plan. This introductory phase focuses on initial steps toward reinvestment in the existing inventory through improvements to core campus residence halls and growth North of Boulder Creek. The initial projects include two new construction projects at sites in the North of Boulder Creek area to grow the on-campus housing supply and provide swing space while renovation projects occur.

The three renovation projects are to address deferred maintenance concerns in historic Main Campus residence halls. Following these projects, the University has the flexibility to decide on one of two scenarios to follow for longer term housing improvements. The Project Team believes that this approach will provide CU Boulder flexibility should market conditions or university priorities shift, while still focusing on the key objectives of this Plan.

**SCENARIO A – STRENGTHEN CORE CAMPUS:** Following the Initial Direction project, the long-term focus of Scenario A is strengthening the core campus residence halls with reinvestment in the current inventory by refreshing, renovating, and improving existing living environments. While a series of renovation projects occurs, the housing inventory would also grow. The majority of this added inventory would be located in the North of Boulder Creek, Kittredge Complex, and Williams Village areas as new sites are developed and existing communities are replaced with higher-density developments.

**SCENARIO B – EAST CAMPUS GROWTH:** Scenario B focuses on many of the same objectives as Scenario A with improvements to core campus residence halls and growth North of Boulder Creek, however, proposes a significant residential growth on East Campus. This scenario proposes utilizing expanded housing offerings as an avenue to continue to develop East Campus into a vibrant, mixed-use hub of CU Boulder campus life.

An additional “base case” scenario was also evaluated for comparison purposes only. This option focused solely on maintaining the existing housing inventory with the minimum level of improvements to address deferred maintenance. Though this scenario does not allow for programmatic improvements or added supply, a series of capital projects would still be required to upgrade facilities. The Project Team does not recommend this scenario given the limited strategic benefit of the capital investment required.

Scenarios A & B were assessed based upon relative alignment with key strategic objectives of increased housing supply, diversification of living options, modernization of the existing inventory, and affordability. This comparison is shown in Exhibit 1 on the following page.

**Exhibit 1.** Scenario Alignment with Strategic Drivers

<b>01</b> SHORT-TERM IMPROVEMENTS (0 – 5 Years)		<b>INITIAL DIRECTION:</b>	
<i>New Construction Projects</i>		2	
<i>Renovation Projects</i>		3	
<i>Level of Investment*</i>		<b>\$290M</b>	

<b>02</b> LONG-TERM STRATEGY (5 – 15 Years)	<b>SCENARIO A:</b> <i>Strengthen Core Campus</i>	<b>SCENARIO B:</b> <i>East Campus Growth</i>	
	<i>Housing Growth</i> # of additional beds	+2,000 beds	+3,200 beds
	<i>Diversification of Housing Options</i> Additional non-first-time freshman beds	2,600	3,100
	<i>Modernization of Inventory</i> % of inventory replaced or significantly renovated	47%	53%
	<i>Student Affordability**</i> Annual Increases / New Project Premium	3% / 20%	3% / 20%
	<i>Level of Investment</i> Inclusive of Initial Direction Costs	<b>\$1.25B</b>	<b>\$1.7B</b>

\*Includes only site development / design costs for third renovation project (Libby Hall)  
 \*\*Rates are for housing only. Lower board increases would allow for a blended 3% overall increase.

Given the scale of CU Boulder’s housing system and substantial facility needs identified, the long-term improvements will require considerable capital investment over a period of 10 – 15 years. The benefits to the institution, however, will be considerable. Scenarios A and B, while both requiring significant investment, are directly aligned with the institution’s strategic objectives outlined during this Plan. Additionally, both Scenarios are financially feasible and maintain the required debt coverage ratios throughout the course of the improvements. The ultimate decision on the long-term strategy for the housing system will depend on institutional priorities, campus land use choices, and market / demand conditions following the implementation of the Initial Direction projects.

## Next Steps:

**Further definition of initial phase(s) of the Plan:** The Initial Direction projects are key to enabling the successful long-term implementation strategy. New beds are necessary as “swing space” to allow for a series of renovations on the Main Campus to occur as quickly as possible. Two new housing facilities North of Boulder Creek will provide additional on-campus supply and offer swing space to allow for renovations of existing residence halls. Further evaluation into the programmatic needs, site conditions, and financial plan of these projects is necessary to ensure they meet the long-term needs of housing system.

**Refinement of financial plan:** As a part of the Plan, the Project Team has developed an integrated financial model projecting performance of the entire housing system as improvements occur. Continued refinement of this model will be necessary as implementation occurs to ensure the system maintains the required financial parameters (1.25 debt coverage ratio and debt capacity) in a manner that balances affordability and long-term facility viability.

**Alignment with other student support needs:** This Plan focused specifically on CU Boulder’s housing needs, however, a holistic evaluation of how these housing improvements will impact other campus resources and spaces should be considered in greater detail. In particular, campus dining needs should be evaluated to understand how existing offerings can support added on-campus residents and support the overall financial plan. These improvements should be integrated into the development of the campus master plan.

**Evaluate alternative delivery methods:** Individual projects proposed in the Plan may be viable candidates for public-private partnerships given their ability to generate new revenue streams, achieve risk transfer objectives, or preserve the institution’s balance sheet for other capital needs. Additional exploration on these individual projects should be undertaken to evaluate their feasibility, impact on the housing system, ability to offer affordable rates, impact on residence life, quality of service, and private sector interest.

# 02

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## Introduction

## Introduction

In early 2019, the University of Colorado Boulder (“CU Boulder” or the “University”) engaged the Project Team of Brailsford & Dunlavey, Inc. (“B&D”) and Ayers Saint Gross (“ASG”) to conduct a Housing Master Plan (“The Plan”) to guide the housing and resident support service needs of the University for the next 10 years and provide a framework for planning of campus housing over the next 30 years.

The Plan assessed the current housing offerings, analyzed preferences and satisfaction among the campus community, provided an understanding of options within the surrounding off-campus market, identified demand for new and/or renovated housing, and outlined the financial implications of implementing new housing or improvements. Various analyses were conducted within this Plan with the goal of addressing the following key objectives:

- 1 Define the vision for housing at CU Boulder**
- 2 Examine providing both undergraduate and graduate students, as well as faculty and staff, with increased housing flexibility and choices along with integrated services, amenities, and spaces that support community building.**
- 3 Create an implementation plan that allows for sustainable financial performance while supporting new construction and continued facility reinvestment**
- 4 Develop a roadmap that informs future decision-making including capital investments**
- 5 Align with the campus strategic goals, vision, and other planning initiatives**

The Project Team would like to express appreciation to the CU Boulder Housing Master Plan Project Committee. Their continued feedback and support have been integral to this Housing Master Plan.

Members of the CU Boulder Project Committee are listed below:

- ◆ **Thomas Goodhew** – Assistant Director, Facilities Planning
- ◆ **Dan Gette** – Interim Associate Vice Chancellor of Student Affairs
- ◆ **JT Allen** – Director of Facilities for Housing & Dining Services
- ◆ **Lindsay Schumacher** – Facilities Planner
- ◆ **Jon Keiser** – Assistant Director for Design & Project Management

Finally, this document has been constructed to summarize the key findings and resulting recommendations of the Plan, and to provide the University with the information necessary to guide its housing efforts. B&D and ASG conducted research using both primary and secondary information sources that are deemed reliable, but whose accuracy cannot be guaranteed. B&D and ASG do not represent or warrant that the estimates and projections contained herein will be realized, as the actual performance will be influenced by market and other external factors.

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## Work Plan

## Work Plan

The specific methodologies employed by the Project Team as part of this planning effort included the following:

- **A tour of existing campus housing, sites, and related campus facilities** was conducted to provide a visual background for the data and improve the Project Team's understanding of the University's on-campus housing system. During the tours a visual inspection was conducted to inform an overview adequacy and efficacy assessment related to current program distribution and functionality of facilities.
- **A Strategic Asset Value ("SAV") workshop** was conducted on February 5, 2019 with key University stakeholders to identify and prioritize the strategic objectives that any future projects must address to help advance the University's permanent mission and strategic objectives. This session informs the Strategic Framework outlined within this report that set the framework for subsequent research, recommendations, and decision-making related to this Plan.
- **Stakeholder interviews** were held with more than 30 key University staff members to understand their department's perspectives on current housing offerings, their goals / vision for CU Boulder housing and considerations for new or improved housing. Collectively, these staff members represented their respective departments which resulted in the Plan reaching a larger portion of the campus community
- **Six focus group sessions** were held with more than 30 key CU Boulder students, faculty, and staff during the spring 2019 semester to gain qualitative information regarding housing preferences and current living conditions, as well as to inform the content of the Internet survey discussed later in the document.
- **An off-campus housing market analysis** was performed to better understand the costs, amenities, competition, and other key metrics of the housing market proximate to CU Boulder's campus.
- In order to understand the relative position of CU Boulder housing in comparison to peer institutions, a **competitive context assessment** was completed. CU Boulder housing-specific information was compared to the following nine (9) peer institutions for benchmarking purposes: University of California - Berkeley, University of Oregon, University of Wisconsin - Madison, Oregon State University, University of Utah, Arizona State University - Tempe, Michigan State University, University of Washington - Seattle, and the University of Michigan. The key characteristics of these

housing systems were analyzed including their scale, capacity and bed / unit mix type, rental rates and dining costs, and recent projects among other aspects.

**Open House sessions** were conducted to engage students, faculty, and staff and gain additional qualitative data on preferences, satisfaction, and desires in regards to housing at CU Boulder. Four sessions were held at different campus locations (Williams Village Center, Center for Community, University Memorial Center, and Engineering Center) to encourage participation from multiple constituent groups. An estimated 320 participants participated in these open house sessions.

**An existing conditions assessment** was conducted to understand current facility offerings, space types, and programmatic space (“outside-the-unit”) within each housing facility. CU Boulder’s inventory was then compared to national standards to understand any shortage or over-supply.

To gather quantitative data that would help inform the Plan, the Project Team instituted an **Internet-based survey** for CU Boulder students, faculty, and staff. The survey asked a variety of questions related to current housing patterns, satisfaction levels, pricing sensitivities, and demand preferences related to future housing offerings. Two separate surveys (student along with faculty and staff version) were developed to solicit feedback. Hard copies and multiple translations of the faculty and staff survey were distributed to accommodate different accessibility and language needs (English, Spanish, Mandarin, and Nepali).

- ◆ **Student Survey:** 3,428 students responded to the survey, representing approximately 11.4% of the student population. A statistically significant representation of the broader campus community responded with a + / - 2% margin of error, assuming a 95% confidence interval. Survey responses were sorted by various demographic characteristics to further investigate housing experiences in both the on- and off-campus market as well as future living preferences.
- ◆ **Faculty and Staff Survey:** In total, 622 faculty and 1,365 staff responded to the survey, representing approximately 21% of the employee population. The survey was administered in English, Spanish, Mandarin and Nepali in order to ensure all employees had an equal opportunity to participate in sharing their experiences. A statistically significant representation of the overall population responded with a + / - 2% margin of error, assuming a 95% confidence interval. Survey responses were sorted by various demographic characteristics to further investigate current housing situations and the impact of housing on retention.

Based on the results of the Internet-based survey, a **housing demand assessment** was conducted to understand the opportunity to increase on-campus capture rates at survey tested housing options. The demand assessment was conducted using B&D’s proprietary demand-based programming

methodology, which utilizes predictive analytics to project demand from statistically significant survey responses and enrollment figures provided by the University. Demand figures contain detailed insights into housing preferences for various unit types, bedroom occupancy preferences, and rental rates tested within the survey.

**Planning scenarios** were developed by the Project Team based on the strategic framework, market / demand findings, and other analyses. The scenario planning process helped develop a comprehensive strategy for improving the housing system through a series of projects including new construction, renovation, and demolition. Individual projects and scenarios were reconciled with their alignment with site considerations, neighborhood creation, and other strategic objectives.

**An integrated financial model** was developed to project the future performance of the proposed scenarios in addition to the existing housing system. The flexible model was designed to exhibit the influence of variables such as delivery methods, revenues, expenses, and capital budgets on development and reinvestment decisions.

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## Strategic Framework

## Strategic Framework

At the outset of this planning effort the Project Team established a strategic framework with which to evaluate future decision making and ensure implementation consistency throughout the course of the Plan.

As one of the first steps in this process, B&D facilitated a Strategic Asset Value (“SAV”) session with a group of administrators and key personnel from CU Boulder on February 5th, 2019. Participants in this session are listed below:

- ◆ **Akirah Bradley** – Vice Chancellor Division of Student Affairs
- ◆ **Gwen Pomper** – Associate Vice Chancellor for Enrollment Management
- ◆ **Kevin MacLennan** – Assistant Vice Chancellor of Enrollment Management
- ◆ **Carla Ho-a** – Associate Vice Chancellor and Deputy Chief Financial Officer
- ◆ **David Kang** – Vice Chancellor, Infrastructure and Sustainability
- ◆ **Chris Ewing** – Assistant Vice Chancellor for Planning, Design, and Construction
- ◆ **Ann Schmiesing** – Senior Vice Provost for Academic Resource Management
- ◆ **Bill Haverly** - Campus Architect
- ◆ **Dan Gette** – Interim Associate Vice Chancellor of Student Affairs
- ◆ **Derek Silva** - Executive Director of Real Estate
- ◆ **Thomas Goodhew** – Assistant Director, Facilities Planning
- ◆ **JT Allen** – Director of Facilities for Housing & Dining Services
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Through this workshop, campus leaders discussed independent strategic objectives as they related to the Plan utilizing a gap analysis tool. The discussion was facilitated by identifying the gaps that exist between CU Boulder’s existing condition and desired future state.

The intent of this process was to help inform facility development decisions and to assure that housing responds to the prioritized strategic objectives in the most economical manner possible. The SAV analysis provided a filter through which the Plan was evaluated and assumptions were prioritized. The full SAV Story is provided in Appendix A of this document, but the key drivers by chapter are outlined below.



## QUANTITY + LOCATION OF STUDENT HOUSING

- ◆ Significant quantities of beds should be clustered in order to define self-sustaining neighborhoods
- ◆ Current & future residential neighborhoods will include the following:
  - Main Campus
  - North of Boulder Creek
  - East Campus
  - Kittredge Complex
  - Williams Village
  - South Campus
- ◆ Main Campus locations will be prioritized for undergraduate students. In terms of proximity to campus, graduate student, students with families, and faculty and staff housing have the most flexibility.



## TARGET MARKET, UNIT TYPOLOGY, AND PROGRAMMATIC REQUIREMENT

- ◆ Housing must enhance opportunities for involvement in the campus community and serve as a catalyst for student success and retention.
- ◆ The housing system should be a meaningful part of the educational experience for residents in all communities.
- ◆ CU Boulder shall explore expanding the current housing program beyond a substantial first-time freshman focus and offer more options for returning undergraduates, transfer students, graduate students, and faculty and staff.



## FINANCIAL ACCESSIBILITY + QUALITY RECONCILIATION

- ◆ CU Boulder desires a balanced pricing approach that promotes equity and accessibility while maintaining a high quality standard for operations and maintenance.
- ◆ New construction / renovation projects should:
  - Consider program efficiencies to maximize space usage
  - Adhere to quality construction standards that account for total life-cycle costs
  - Prioritize sustainable design and operations



## FINANCIAL PERFORMANCE + INSTITUTIONAL WILL

- ◆ The housing system must continue to be financially successful in order to allow for maintenance, reinvestment, and new construction to support modernization and diversification of inventory.
- ◆ Maintaining financial self-sustainability, defined as maintaining a 1.25 debt coverage ratio, of the system is critical as modernization occurs

The SAV Story articulates CU Boulder's targeted new reality. Its purpose is to outline aspirations and strategic imperatives, and express permanent ideals and values.

Based on the stated goals outlined during this process a quantification of CU Boulder's targeted new reality was developed. Exhibit 2 communicates this potential based on a targeted capture rate per cohort group. Please note these targeted bed counts do not represent a recommended scale of the housing system. They are reconciled with current market and financial realities later in this Plan.

**Exhibit 2.** Current Housing Program vs. Targeted New Reality

	Enrollment	Current Capture Rates*	Targeted Capture Rates
First-Time Freshmen	7,100	95%	● 95% - 98%
Sophomores + Returning Freshmen	8,497	10%	▲ 20% - 25%
Juniors	6,361	7%	▲ 15% - 20%
Seniors	7,790	7%	▲ 15% - 20%
Graduate students	5,798	8%	▲ 10% - 15%
<b>TOTAL STUDENTS</b>	<b>35,546</b>	<b>27%</b>	<b>▲ 30% - 35%</b>

	Count*	Current Capture Rates*	Targeted Capture Rates
Faculty	4,890	4%	▲ 5% - 10%
Staff	4,725	2%	▲ 5% - 10%
<b>TOTAL FACULTY / STAFF</b>	<b>9,615</b>	<b>3%</b>	<b>▲ 5% - 10%</b>

\*Based on all 2019 enrollment and staff levels

# 05

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## Key Findings

# Key Findings

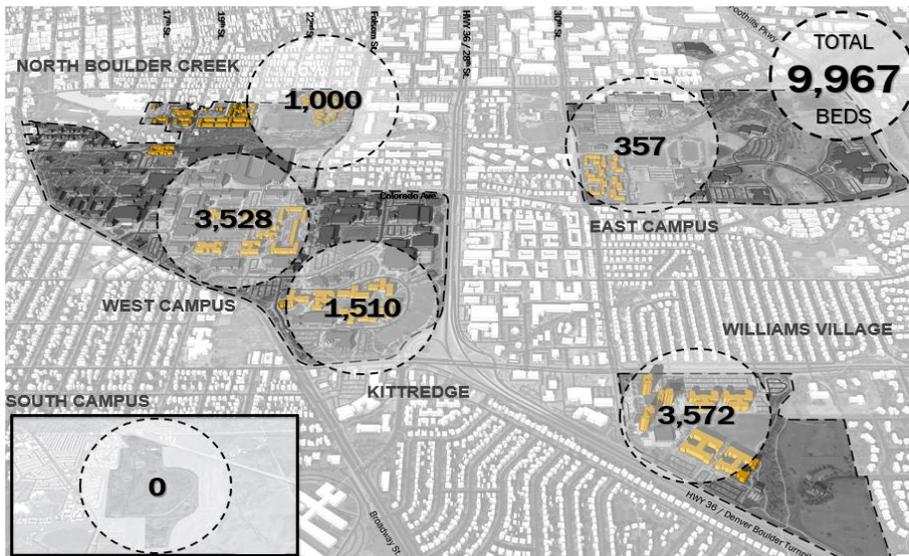
The Project Team’s comprehensive planning process included a series of qualitative and quantitative analyses resulting in the following key findings relating to student, faculty, and staff experience in the housing system, existing challenges, growth potential, future supply changes, and financial implications. These key findings represent a summary of all work completed during this process, however, additional detail is available within the appendices as noted throughout the Report.

## 1 CURRENT HOUSING SYSTEM

### CU Boulder’s on-campus housing inventory consists of a diversity of living environments and facility types spread across multiple campus locations.

CU Boulder provides a comprehensive on-campus housing program to support the institution’s strategic objectives, cultivate a sense of belonging for the campus community, and offer a holistic and inclusive experience. CU Boulder currently houses approximately 10,000 residents spread across campus in a variety of different living environments. Five different residential neighborhoods currently house students: North of Boulder Creek, Main Campus, Kittredge Complex, East Campus, and Williams Village. While South Campus does not currently offer any housing yet it was included as a part of this Plan to test the market demand for potential housing development in the area.

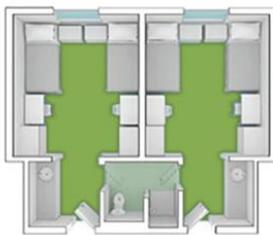
*Exhibit 3. Current Bed Count by Neighborhood*



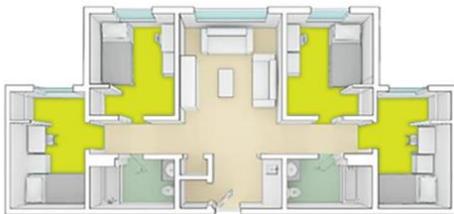
Each residential community offers a different experience and living environment both within and outside the housing facility. This Plan included an assessment of CU Boulder’s current unit types to understand if the mix of units offered meet the needs of all campus cohort groups. For a common understanding, the Project Team classified all current unit types into the following categories.



**TRADITIONAL** hall style configurations have double or single bedrooms that open directly onto a corridor. Residents use shared bathrooms and eat and socialize in communal spaces. Ideally, each residential community within the building has its own dedicated lounge. Traditional halls require a greater percentage of space dedicated to community building to accommodate these functions. This configuration provides residents with plentiful opportunities to build relationships with diverse peers and resident advisors, promoting academic success. This is particularly appropriate for first year students making the transition to college.



**SEMI-SUITE** units are similar to traditional hall-style units except that bathrooms are located within the unit and shared between two rooms. Residents do not have living or dining areas within their private living space thus halls still require significant amounts of space outside the unit devoted to community building. Both first year and second year students thrive in these units based on the age appropriate housing model.



**SUITES** incorporate both a bathroom and living area within a unit with several single or double bedrooms. Fewer social spaces are needed within the building as the included living area provides space for internal social networking. Second and third year students, who generally have more established social networks typically thrive in this type of residential experience.



**APARTMENTS** add a kitchen to the included living area and bathroom within a single unit. On-campus apartment buildings often include some community spaces and offer access to resources like resident advisors although the percentage of this space is quite lower than other unit typologies. These units are best suited for upper division and graduate students along with faculty and staff.

Note: Construction costs are generally less for traditional and suite-style units than for apartments.

Of the total 9,967 beds, the majority (71%) are traditional residence hall style with community bathrooms. As seen in Exhibit 4 below, these units are heavily concentrated on Main Campus, Kittredge Complex, and Williams Village. The apartment options (16% of beds) are located at North of Boulder Creek, East Campus, and Williams Village. Semi-suite units which comprise 12% of beds have been developed in new construction and recent renovations that have integrated them within traditional residence halls. Suite units (1% of beds) are limited to Cockerell Hall and Reed Hall on Main Campus.

**Exhibit 4.** Current Unit Mix by Neighborhood



Each residential neighborhood has its own unique characteristics, resources, and amenities for residents. For additional information on neighborhoods and individual residential facilities see Appendix B.

**MAIN CAMPUS** consists primarily of traditional-style residence hall communities housing first-time freshmen. This neighborhood is located in the academic core of campus resulting in close proximity to many academic buildings and student resources. Given the location on the core campus these facilities are located in high-density areas with limited expansion opportunities or parking.

- ◆ *This neighborhood consists of Cheyenne-Arapaho Hall, Farrand Hall, Hallett Hall, Crosman Hall, Reed Hall, Cockerell Hall, Aden Hall, Libby Hall, Baker Hall, Brackett Hall, Willard Hall, and Sewall Hall. Main Campus offers the oldest and most historic housing inventory with an average facility age of 71 years old. Sewall is the oldest building built in 1934 and Baker is the newest built/completely renovated in 2005.*

**KITTREDGE COMPLEX** houses about 1,200 first-time freshmen in traditional and semi-suite-style layouts. This neighborhood is located in the southeast corner of Main Campus, separated by the Center for Community (C4C), Fiske Planetarium and Science Center, Sommers-Bausch Observatory, Law School, School of Education, Events Center, and Communication Disorders buildings. This neighborhood offers small community sizes, diverse outdoor areas, and adjacent access to campus amenities.

- ◆ *Kittredge Complex consists of Kittredge West Hall, Kittredge Central, Andrews Hall, Arnett Hall, Buckingham Hall, and Smith Hall. Average age of these facilities is 44 years old, though all have undergone renovations or are new since 2007. Smith and Andrews are the oldest buildings built in 1963 and Kittredge Central is the newest built in 2013.*

**WILLIAMS VILLAGE** is currently the most diverse neighborhood in terms of unit types with a mix of traditional, suite, and undergraduate apartment options. The neighborhood offers a variety of student amenities and open space, but lacks academic offerings. This requires the majority of residents to commute approximately one-mile to the Main Campus for classes. The facilities in Williams Village offer large community sizes and high-density developments. This neighborhood is located directly southeast of Main Campus and

- ◆ *Williams Village consists of the Stearns Towers, Darley North and South, Bear Creek Apartments, and Williams Village North and East. Williams Village has the newest additions to the housing inventory, though the average age of all facilities is 31 years old. Stearns Towers are the oldest buildings built in 1966 and Williams Village East is the newest built in 2019.*

**EAST CAMPUS** housing offerings consist solely of the Smiley Court apartment complex. Smiley Court is a low-density apartment complex catering to graduate students, students with families, faculty, and staff residents. Smiley Court built in 1963, is 56 years old and occupies a highly visible campus corner at 30<sup>th</sup> Street and Colorado Avenue. At the present time limited programming, student amenities, and community space exist on the East Campus. The residents of East Campus, however, are close to many of the University's research centers and laboratories.

**NORTH OF BOULDER CREEK** currently consists of graduate and family apartment communities with a total of 1,001 beds. While the neighborhood occupies a campus edge location it provides easy access to the campus core via a bridge over Boulder Creek. The neighborhood offers a low-density environment with pleasant outdoor spaces along Boulder Creek. Floodplain requirements will need to be addressed in any redevelopment strategy.

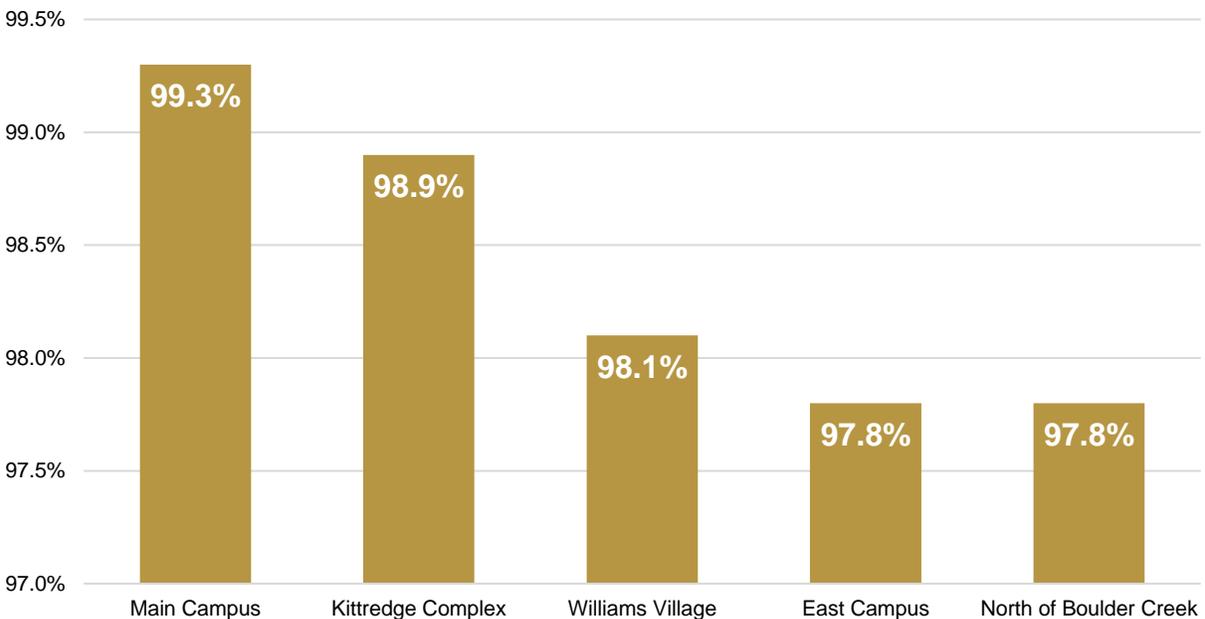
- ◆ *The North of Boulder Creek neighborhood consists of seven different communities: Athens Court, Athens North, Expansion Units, Faculty Court (a.k.a. Faculty/Staff), Marine Court, and Newton Court. Most of the buildings in this neighborhood are older and in need of updating or*

replacement with an average age of 51 years old. Faculty Court is the oldest building built in 1954 and Athens North is the newest built in 1987.

**CU BOULDER SOUTH** does not currently offer housing but is viewed as a potential long-term community with both university and community residents. Further detail on this housing opportunity and how it relates to the overall Housing Master Plan is provided in **Appendix G**.

CU Boulder’s housing system has historically been a very popular option among undergraduate and graduate students as well as limited faculty and staff. The system exhibits strong occupancies and was slightly under full-capacity at 99% in fall 2018 and at the start of the fall 2019 semester was over capacity by approximately 150 residents. Exhibit 5 shows this occupancy breakdown across the housing neighborhoods.

**Exhibit 5.** Fall 2018 Occupancy by Living Location



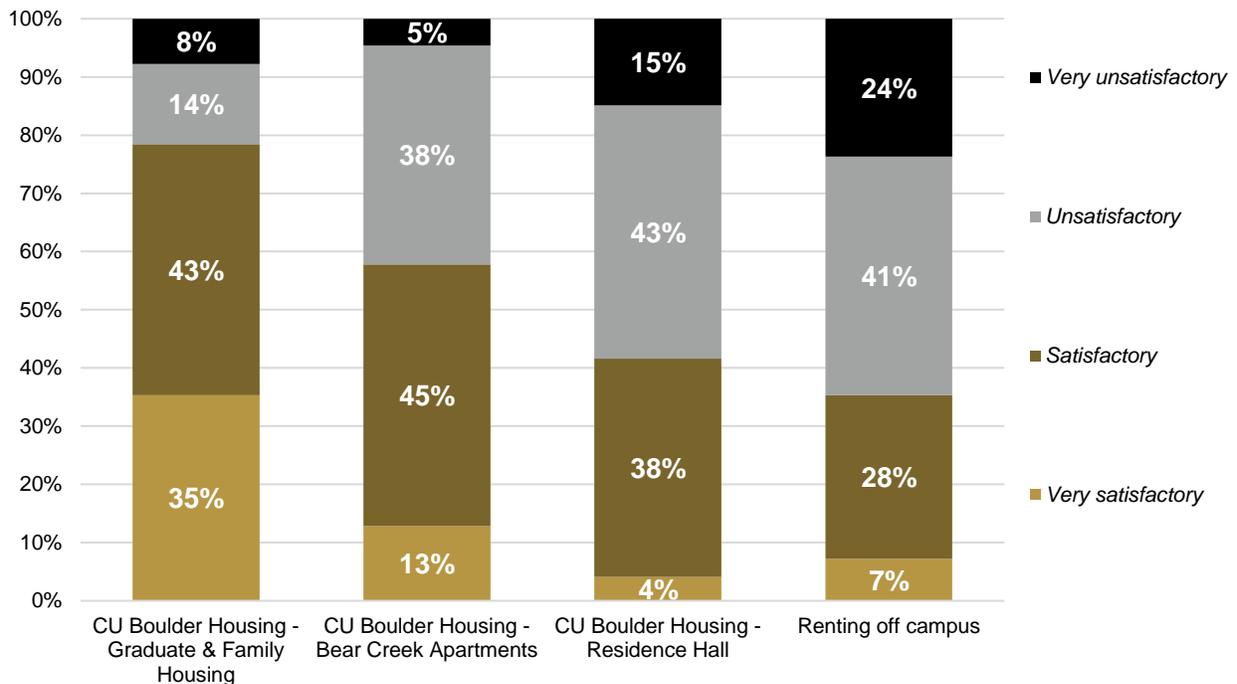
**Historically, the housing system has demonstrated strong occupancies, high resident satisfaction, and positive impact on student success.**

Strong occupancies can generally be explained by high resident satisfaction with on-campus living. Focus group sessions and survey results indicate that residents are satisfied with on-campus living options with the average satisfaction across all housing locations at 87%. Exhibit 6 shows the breakdown by different living options tested in the survey.

The lowest satisfaction levels are seen from students who are currently renting off campus while those living in Greek housing or Graduate / Family Housing show the highest level of satisfaction. The Graduate / Family Housing satisfaction appears to be driven primarily by affordability of these units which are generally under the market rates for comparable units.

Among the residence hall neighborhoods, the Kittredge Complex (94% satisfaction) exhibits the highest levels of satisfaction among students followed by Main Campus (85%) and Williams Village (83%). Analyzing the data by individual communities shows that the older un-renovated buildings along with Darley & Stearns have the highest levels of dissatisfaction. It should be noted there was minimal difference in satisfaction noted between Residential Academic Program (RAP) and non-RAP residents.

**Exhibit 6.** Satisfaction by Living Location



The survey also inquired about participants' satisfaction with affordability of housing options both on- and off-campus. The primary concerns were raised with the affordability of residence hall options and off-campus housing rentals. Approximately 65% of respondents expressed dissatisfaction with the affordability of the off-campus rental market. Interestingly, high levels of satisfaction related to affordability were noted among Graduate and Family Housing residents. This highlights the fact that a large component of the popularity related to Graduate and Family Housing is related to its current pricing.

**65%**  
of respondents were  
dissatisfied with  
affordability of off-  
campus options

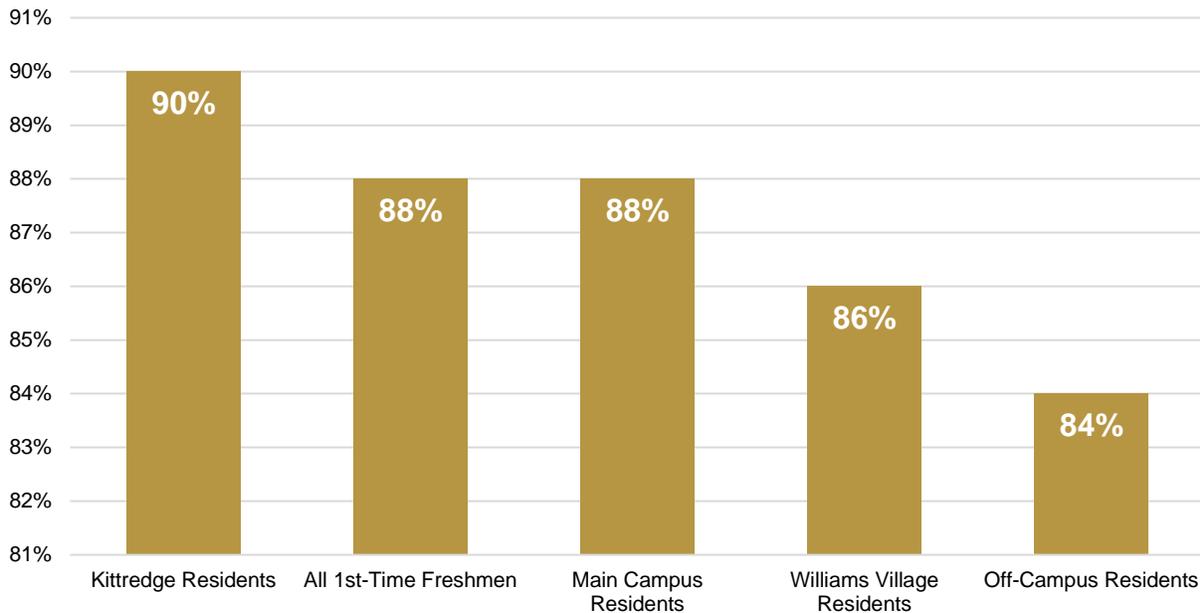
In addition to the high levels of satisfaction with the experience, housing is seen to be an important enrollment decision for many students. Survey results highlighted that 68% of first-time freshmen see housing as an important factor in their decision to attend CU Boulder. While that percentage declined among returning undergraduates, approximately 38% of graduate students noted housing as an important decision factor perhaps highlighting the competitive nature of the Boulder housing market.

84%

*Retention rate of off-campus residents, the lowest of any group*

Housing is also seen as an important factor contributing factor to overall student retention. It was shown that 1<sup>st</sup> and 2<sup>nd</sup> year retention rates among all enrolled students were stronger for on-campus students than those living in the off-campus market. As shown in Exhibit 7, off-campus residents had the lowest retention rate of any group at 84%. The highest retention rates were from residents of the Kittredge Complex at 90%. Additionally, students participating in RAPs showed higher retention rates than those students who were not part of a RAP.

**Exhibit 7.** 1<sup>st</sup> to 2<sup>nd</sup> Year Retention Rates by Res Hall Community (Fall 2017 – Fall 2018)



Housing plays an important role in the retention of faculty and staff at CU Boulder. Based on the survey results over 60% of faculty and staff who have been at the institution less than 10 years indicate that the cost of housing is an important factor in their decision to stay at CU Boulder. The cost of housing is a less critical consideration in continued employment at CU Boulder for employees with longer tenure. This highlights the importance of having affordable housing options or resources available to newer employees who may otherwise choose to leave the institution.

## The current housing supply is responsive to a predominant first-time freshman resident population.

CU Boulder's current housing inventory mainly caters to first-time freshmen as exhibited by resident population (95% of first-time freshmen live on campus, 74% of on-campus residents are first-time freshmen) and unit type mix (71% traditional style). As a result of the freshman live-on requirement, capacity for returning students is limited, facilitating the culture of off-campus living after year one. Exhibit 8 shows current students capture rates by class for fall 2019.

It should be noted that the opening of Williams Village East in fall 2019 (705 beds) helped increase bed space for returning undergraduates. However, a larger than expected freshman class necessitated additional bed space within the new facility be occupied by first-year students. CU Boulder also provides housing space within the Graduate and Family Housing communities for approximately 3% of the faculty and staff population.

**Exhibit 8.** *Capture Rates by Cohort*

Fall 2019	Enrollment	Student Residents	Capture Rates
First-Time Freshmen	7,100	6,711	95%
Sophomores + Returning Freshmen	8,497	892	10%
Juniors	6,361	476	7%
Seniors	7,790	531	7%
<b>TOTAL UNDERGRADUATES</b>	<b>29,748</b>	<b>8,610</b>	<b>29%</b>
Graduate students	5,798	486	8%
<b>TOTAL STUDENTS</b>	<b>35,546</b>	<b>9,096</b>	<b>26%</b>

Fall 2019	Count	Housing Residents	Capture Rates
Faculty	4,890	189	4%
Staff	4,725	72	2%
<b>TOTAL FACULTY &amp; STAFF</b>	<b>9,615</b>	<b>261</b>	<b>3%</b>

17%

More first-time freshmen housed at CU Boulder than the peer average

In comparison to many peer institutions, CU Boulder provides housing for a fairly limited proportion of non-freshman students. Exhibit 9 highlights this relative shortfall analyzing chosen peer institutions. While the institution has a high first-year capture rate due to the live-on requirement, the institution is generally lagging behind in options for returning students (second-year students in particular). In comparison to its peers, CU Boulder houses 17% more first-time freshmen than the peer average. The focus on housing this cohort results in capture rates for sophomores falling 11% below the peer average and the remaining undergraduates falling slightly below the average. CU Boulder offers housing for a comparable percentage of graduate students compared to the selected peers.

If the University were to achieve the goals for capture rates set forth in the strategic framework, they would capture larger numbers of students than most peers. It should be noted that only three of the selected peers have a first-year live-on requirement (University of Oregon, Oregon State University, and Michigan State University).

**Exhibit 9.** Housing Capture Rates by Class versus Peers (%)

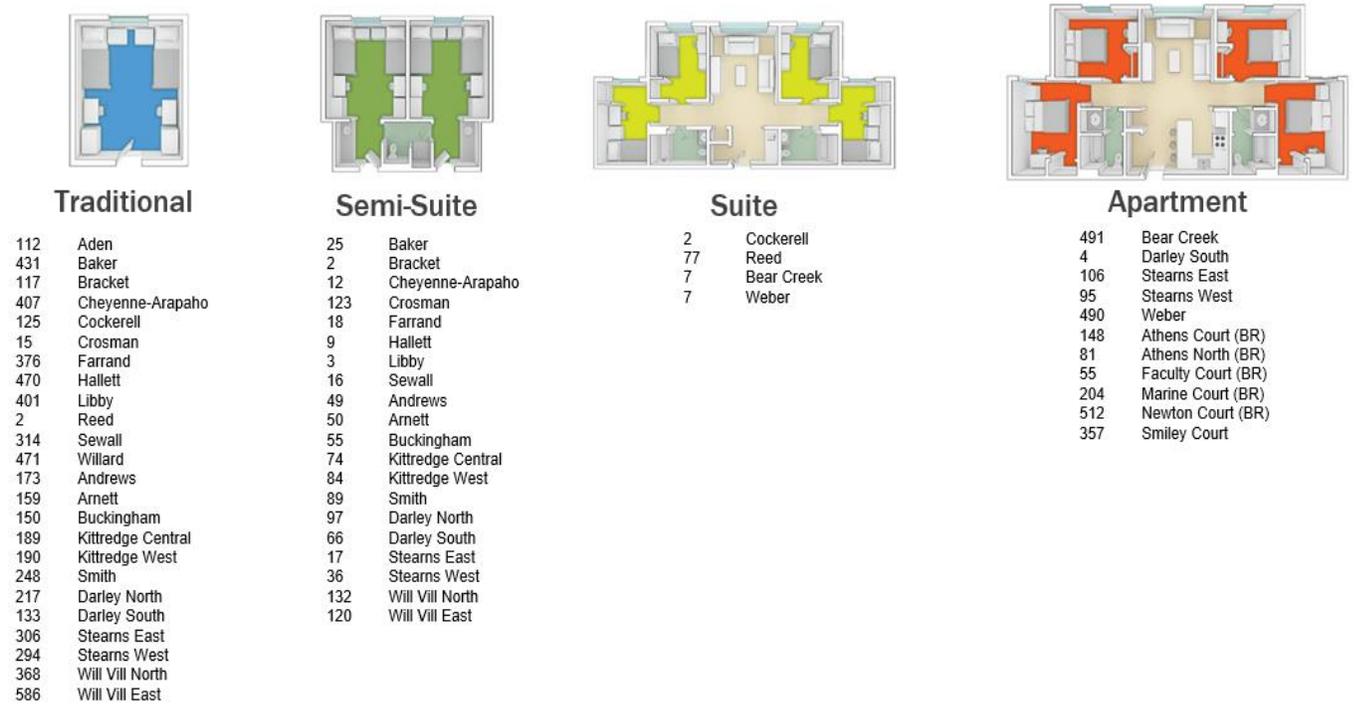
	First-Time Freshmen	Continuing Freshmen / Sophomore	Juniors	Seniors	Graduate Students
<b>CU Boulder (Fall '19)</b>	<b>95%</b>	<b>10%</b>	<b>7%</b>	<b>7%</b>	<b>8%</b>
University of Wisconsin	93%	10%	4%	2%	.02%
Michigan State University	93%	51%	26%	12%	4%
University of Oregon	90%	7%	3%	2%	10%
Oregon State University	80%	15%	4%	1%	2%
University of Utah	68%	14%	9%	7%	2%
University of Washington	68%	27%	13%	10%	4%
University of Michigan	45%	23%	7%	4%	20%
<b>Peer Averages:</b>	<b>78%</b>	<b>21%</b>	<b>9%</b>	<b>5%</b>	<b>6%</b>
<b>Variance:</b>	17% ▲	-11% ▼	-2% ▼	-2% ▼	2% ▲

Note: Information not provided by Arizona State University and University of California, Berkeley.

In addition to the housing capture rates, an assessment of CU Boulder’s unit typology across campus revealed limited unit type diversity and a heavy emphasis on traditional-style options most appropriate for first-year students. As shown in Exhibit 10, the majority of the bed supply is within this living arrangement. While traditional-style units are appropriate for first-year students, and provide advantages of community-building and socialization, this lack of diversity does not allow for long-term flexibility to respond to changing student preferences.

**Exhibit 10.** Unit Typology Breakdown across Inventory

**9,967 TOTAL BEDS**



**6,254 Total**

**24 Halls**

**63%**

**1,077 Total**

**20 Halls**

**11%**

**93 Total**

**4 Halls**

**1%**

**2,543 Total**

**11 Halls**

**25%**

A comparison to peer offerings revealed a lower proportion of semi-suite and suite-style housing. This housing option is typically more appealing to second- or third-year undergraduate students due to increased space, privacy, and independence associated with semi-suite and suite-style housing. Exhibit 11 shows the comparison across undergraduate beds options only. In general, CU Boulder provides an appropriate bed type for graduate students, faculty, and staff, however that will be covered in more detail in the Key Findings section of this Plan.

**1%**  
of CU Boulder  
undergraduates live  
in suite units

**Exhibit 11.** Percentage of Undergraduate Beds by Peer Institution

	Traditional	Semi-Suite	Suite	Apartment
<b>CU Boulder</b>	<b>71%</b>	<b>12%</b>	<b>1%</b>	<b>16%</b>
University of Wisconsin	100%	0%	0%	0%
University of Oregon	90%	0%	0%	10%
University of Michigan	85%	0%	10%	5%
Oregon State University	77%	23%	0%	0%
University of California, Berkeley	53%	10%	15%	23%
Michigan State University	34%	54%	7%	5%
University of Utah	22%	49%	0%	29%
Arizona State University	14%	60%	4%	22%
University of Washington	11%	56%	12%	22%
<b>Peer Averages:</b>	<b>54%</b>	<b>28%</b>	<b>5%</b>	<b>13%</b>
<b>Variance</b>	<b>17% ▲</b>	<b>-16% ▼</b>	<b>-4% ▼</b>	<b>3% ▲</b>

Based on the findings of the peer assessment and student demand preferences, the Project Team suggests the University diversify its unit type mix to include additional semi-suites and apartments. While traditional-style units are appropriate for first-time freshmen, no additional beds within this living arrangement are recommended. The university should consider retrofitting a portion of these traditional beds into semi-suites arrangements where feasible. The peer institution data and demand analysis provide targeted bed counts by unit, however, the key for CU Boulder is to gradually diversify the unit mix as renovation or new construction projects take place. Each individual project will need to be evaluated based on its ability to support unit diversification in a financially responsible manner.

## 2 HOUSING MARKET CONSIDERATIONS

**Housing challenges have become more prominent as growth has occurred both within the university and in the population of Boulder.**

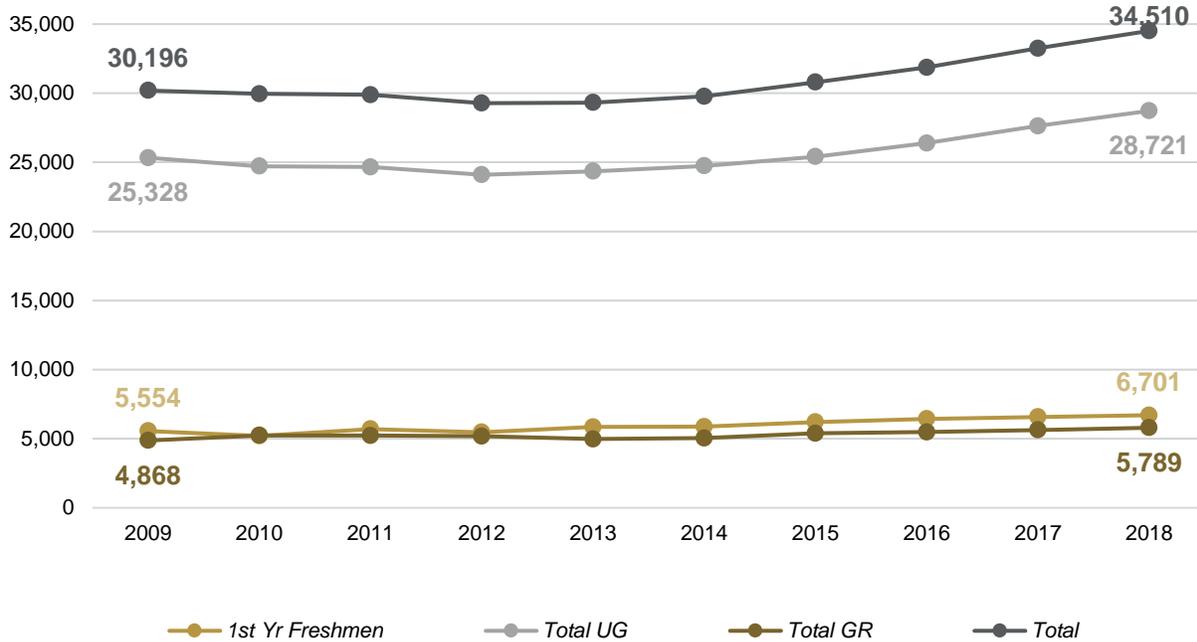


The popularity of Boulder and the entire Front Range has resulted in an increasing influx of residents and strained the housing supply. Increasing student, faculty and staff populations without a proportional increase in the housing inventory has led to lower capture rates pushing more members of the campus community into the off-campus market. The on-campus housing supply has been unable to keep up with enrollment growth and, if trends continue, the university will continue to see this gap widen.

While CU Boulder has built new housing, the most recent additions have been concentrated in the Williams Village neighborhood starting with the Bear Creek Apartment Complex (995 new beds in 2003) then Williams Village North (500 new beds in 2011) and most recently Williams Village East which opened in fall 2019 with 705 beds. These residences have helped alleviate supply challenges for undergraduate students but have had less impact with housing challenges among graduate students, faculty, or staff.

CU Boulder student, faculty and staff populations have grown steadily over the past ten years. Student total enrollment grew 14% from 2009 to 2018 with an average annual increase of 3.8% (Exhibit 12). A large portion of this growth can be attributed to incoming freshmen whose numbers grew at 21% during this time period.

**Exhibit 12.** Student Enrollment Trends

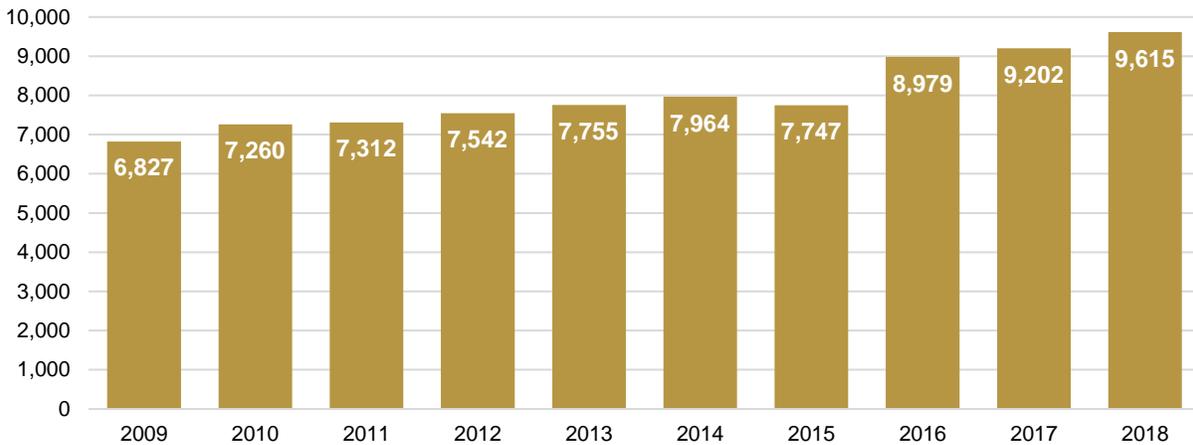


Comparatively, faculty and staff populations grew by nearly 41% from 2009 to 2018 for a campus total of 9,615 (Exhibit 13). Employment growth in the city of Boulder increased by 15% (25,365 jobs according to the U.S. Bureau of Labor Statistics) during the same time period, thus CU Boulder’s faculty and staff growth represents approximately 11% of employment increase in the area. The largest growth categories among faculty and staff were academic researchers, academic instructors, and exempt University staff. Though campus captures a much smaller percentage of faculty and staff in on-campus housing this growth impacts competition for housing in the area.

**41%**

*Growth rate of faculty and staff since 2009*

During the same 10-year period, on-campus bed capacity increased approximately 21% (1,750 beds) therefore creating the need for nearly 2,600 students to find housing in the Boulder community.

**Exhibit 13.** Faculty and Staff Population Trends

Colorado was the 7<sup>th</sup> fastest growing state in the country in 2018 growing by approximately 80,000 residents according to the U.S. Census Bureau. Within the state, Boulder County has been one of the fastest growing areas with a 10% population increase since 2010. Population growth trends for the county are expected to continue at approximately 1% growth per year.

Various market conditions exist that have inhibited Boulder's ability to keep up with the growing population. One such market condition was a building moratorium in most parts of the city of Boulder. This moratorium limited building height to 35-feet (38-feet downtown and 40-feet in industrial areas), which meant reduced large scale developments to keep pace with demand.<sup>1</sup> Developers did not build any 50-unit plus projects in 2016 or 2017 which further widened the supply gap.

### **The rental market in Boulder and the surrounding communities is increasingly competitive with declining vacancy rates and increased rent growth.**

The City of Boulder had seen declining rental vacancy rates from 2010 – 2015 but they have stabilized recently and are now at 6.8% as of May 2019. However, with the City attracting the attention of major employers such as Google, IBM, and others, the demand for housing in the market has continued to rise. Over 2,000 housing units are in the development pipeline within Boulder (*Data source: Co-Star*), which should help ease some of the pressures. Additionally, more new development is proposed for the surrounding areas as over 1,800 rental housing units are coming online in the Broomfield, Louisville, and Superior communities. CU Boulder should continue to track the changing market dynamics and how this

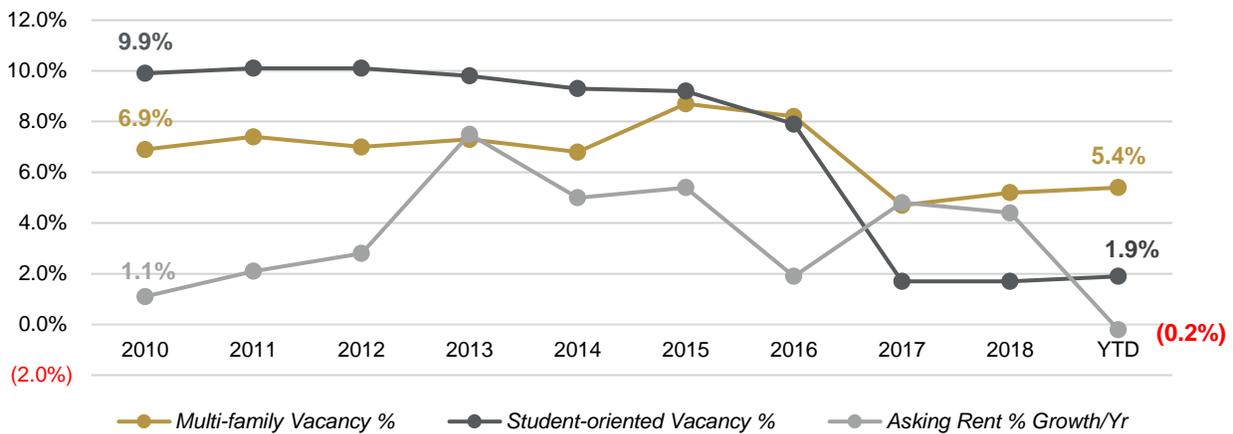
<sup>1</sup> Alex Burness, "Boulder weighs what to do when tall building moratorium expires," The Denver Post, January 25, 2017, <https://www.denverpost.com/2017/01/25/boulder-tall-building-moratorium-expires/>

impacts vacancies and rent growth. Much of the recent new supply has been in higher priced options as rent growth has continued to rise, in the past few years jumping from 1.5% in 2016 to 5.0% in 2018.

The overall housing dynamics have impacted the CU Boulder community living in non-university housing. These students, faculty, and staff are forced to compete with the influx of new residents driving down vacancy and pushing up rental rates. While community-wide rental vacancy rates have stabilized in the past several years, population growth and tight supply have made home ownership increasingly difficult. From 2010 to 2015 the average home price increased four times faster than the average household income level in Boulder, according to the U.S. Department of Housing and Urban Development.

Student-oriented properties are defined as properties that cater specifically to student renters with offerings such as individual bed leases, academic lease terms, roommate matching, all-inclusive utilities and student centric amenities (e.g., fitness center, pool & hot tub, fire pit, study rooms, bike storage, common/game areas). Exhibit 14 shows the general trend in vacancy rates in multi-family and student-oriented properties within a five-mile radius of campus (*Data source: Co-Star*). Vacancy with the general market has stabilized and the student-oriented options show very low levels of vacancy. In combination, declining vacancy rates, increasing population, and slow development highlight some of the difficulties with finding and securing affordable housing for students, faculty, and staff.

**Exhibit 14.** Rental Market Trends – 5 Mile Radius from Campus



One result of the tight housing market is that students have begun searching for next years residence earlier in the year to ensure they are able to secure housing for the upcoming academic year.

The survey indicated that 30% of respondents signed or renewed their lease before January 2019 for the fall 2019 semester. There is increasing pressure on students to make earlier housing decisions, sometimes without ample opportunity to explore all the available options and fully vet properties. This can cause additional student stress and impact student success. Focus group discussions highlighted this concern as well and were also noted among faculty and staff.

The Project Team collected a variety of survey data that highlights the market conditions as reported by students, faculty, and staff. Survey data shows that 49% of both undergraduate and graduate students pay between \$800 and \$1,200 a month for their individual share of rent. Approximately 44% of faculty and 37% of staff pay between \$800 and \$1,200 per month in rent. A comparison of the survey reported weighted average monthly rent and utility costs (personal share) is shown in Exhibit 15.

**49%**  
*of students pay  
 between \$800 and  
 \$1,200 a month for  
 their share of rent*

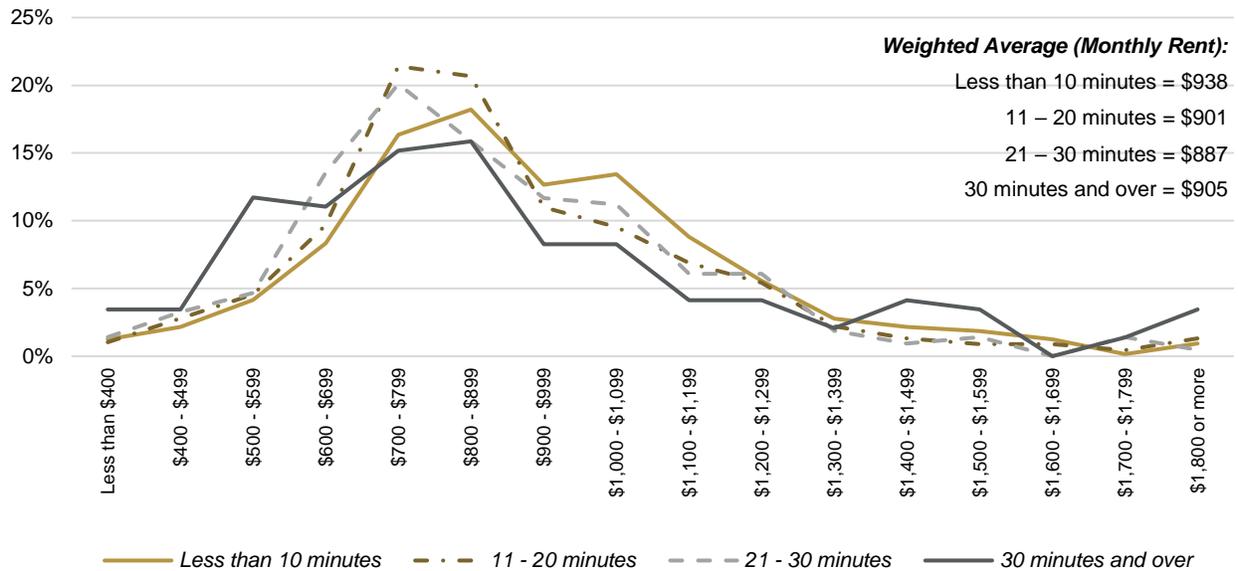
**Exhibit 15.** Survey Reported Housing Costs (Weighted Average, Monthly Rates)

	Rent	Utility Cost	Reported Housing Costs
Undergraduates	\$931	\$87	<b>\$1,018</b>
Graduate Students	\$896	\$87	<b>\$983</b>
Faculty	\$913	\$122	<b>\$1,035</b>
Staff	\$873	\$120	<b>\$993</b>

Though survey respondents showed fairly consistent rental levels, the data illustrated significant differences on where different cohorts are living in the off-campus market. Approximately 30% of undergraduate students living in the off-campus market report living on The Hill which on average offers the highest average monthly rent. Graduate students, however, are much more likely to reside in locations further removed from campus such as CU Boulder South or surrounding communities (Broomfield, Louisville, Superior, etc.). Graduate students are more willing to trade a lower cost of housing for proximity to campus.

Location is an important factor and undergraduate students are typically willing to pay more to live in closer proximity to campus (see Exhibit 16 for reported rent by distance to campus). Rental options under a 10-minute commute to campus are the most expensive according to the survey data. Commute times between undergraduate and graduate students are similar with 40% of both reporting an 11 - 20 minute one-way commute to campus and with 35% of the population walking to campus. Graduate students, however, are more likely to have longer commutes with approximately one-third reporting a one-way commute over 20 minutes.

**Exhibit 16.** Survey Reported Monthly Rent by Distance to Campus



Faculty and staff survey results paint a slightly different picture with 48% choosing to drive to campus. This difference can be attributed to the longer commuting distance required as evidenced by more than 40% of both faculty and staff commuting over 26 minutes to campus. This partially appears to be influenced by the housing pressures highlighted earlier and a desire to find home ownership options, pushing them further from the campus core.

In addition to the survey data, the Project Team utilized CoStar, a third-party real estate information firm, to understand pricing dynamics in the off-campus market. Exhibit 17 shows the average monthly per person rates across various market segments in comparison to the shadow market and Bear Creek apartments. The shadow market is the real estate market of privately-owned condos, townhomes, and single-family homes that attract renters away from apartment communities.

It is important to note that the Bear Creek apartment rates are based on a 9-month lease as opposed to the other rates in the chart that are typically based on 12-month leases (84% of survey respondents reported signing 12-month leases). Compared to the off-campus options Bear Creek appears to be more expensive. Yet when the 9-month cost is annualized, Bear Creek is less expensive per month. An on-campus option with an academic year and an all-inclusive lease (furniture and utilities), makes Bear Creek an attractive option on a monthly basis. The popularity of Bear Creek apartments was expressed by CU Boulder students and stakeholders during campus engagements.

**Exhibit 17. Rental Rate Comparison (2-Mile Radius from Campus)**

	Studio	1BR Apt	2BR Apt	3BR Apt	4BR Apt
<b>BEAR CREEK RATES</b>	<b>\$1,461</b>	<b>-</b>	<b>\$1,035</b>	<b>-</b>	<b>\$887</b>
Student-Oriented Properties	\$1,171	\$1,381	\$692	\$503	\$372
General Market	\$1,239	\$1,381	\$985	\$884	\$715
Shadow Market	-	\$1,616	\$1,099	\$1,040	\$908
<b>CU BOULDER VARIANCE</b>					
Student-Oriented Properties	20%	-	33%	-	58%
General Market	15%	-	5%	-	19%
Shadow Market	-	-	-6%	-	-2%

**NOTES:**

Rates are monthly, per person

Off-campus properties do not include costs of utilities and furniture

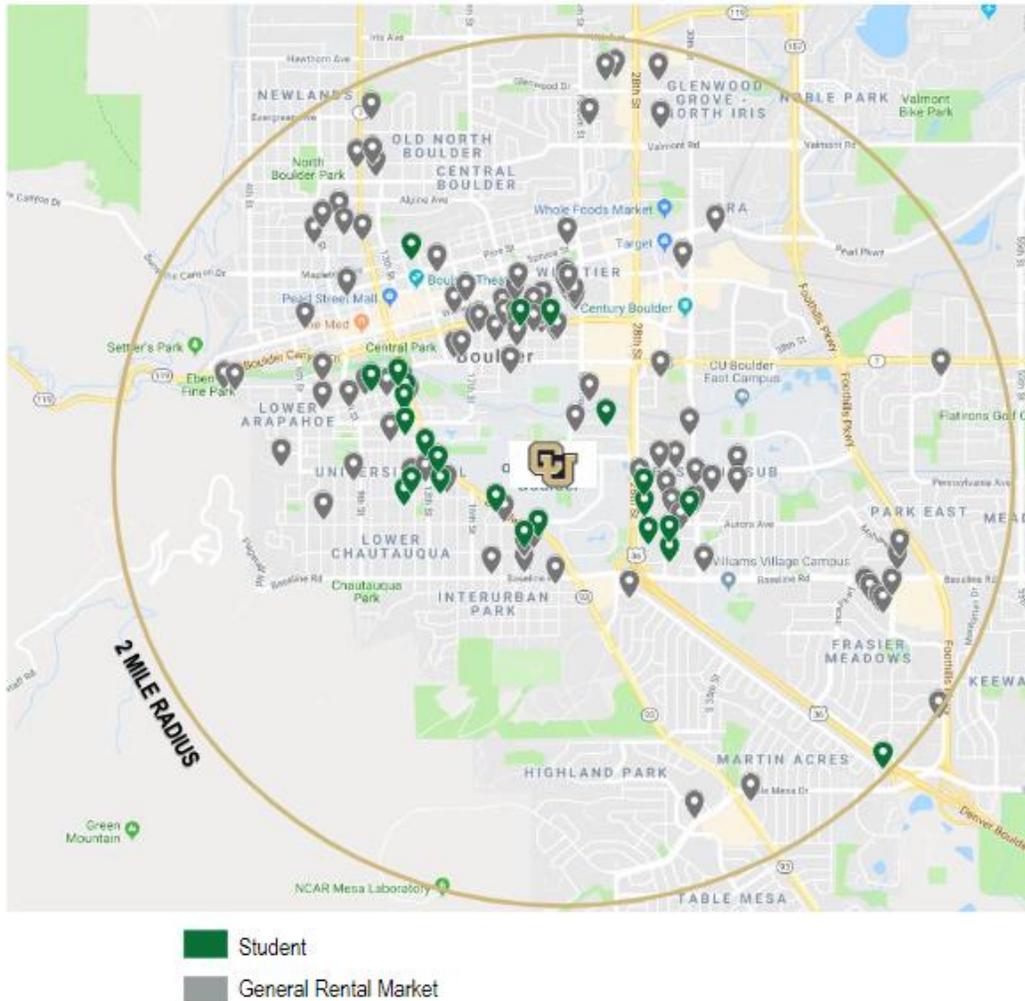
Bear Creek lease is 9 months, typical off-campus lease is 12 months

**31%**

*of the total beds in the rental housing properties around CU Boulder are "student-oriented"*

A map of the properties included within the rental rate analysis is shown in Exhibit 18. This analysis highlighted that 24 out of the 127 multi-family housing properties are deemed "student-oriented" making up approximately 31% of the total beds. This proportion of "student-oriented" beds within a broader market context is slightly below what is typically exhibited.

Exhibit 18. Rental Housing Map (2-Mile Radius from Campus)



As discussed earlier, the properties closest to the perimeter of campus offer higher price points, attractive amenities, and focus on attracting students. Shown in the Exhibit 19, these properties comprise another subset of the broader rental market and have been deemed by the Project Team as “premium student-oriented” properties. The properties are generally concentrated to the east of campus across 28<sup>th</sup> Street. The properties listed are not meant to be an exhaustive list but rather highlight a sampling of those most reflective of this submarket.

As shown in the exhibit, these properties are generally more expensive than rates on campus or in the broader market with an average monthly per person rate of over \$1,400. However, despite the high price point these properties exhibit very low vacancy rates. This information highlights the fact that many students value proximity to campus and unit types with independent space, and they exhibit a willingness to pay for it. The unit types and amenity offerings suggest these properties are targeting undergraduate students as the primary tenants.

Overall, these properties highlight key competition for the university as it considers expanding options for returning undergraduates. The pricing and low vacancy rates suggest there is a market for these types of housing properties. The rates shown are from April 2019.

**Exhibit 19.** “Premium Student-Oriented” Properties

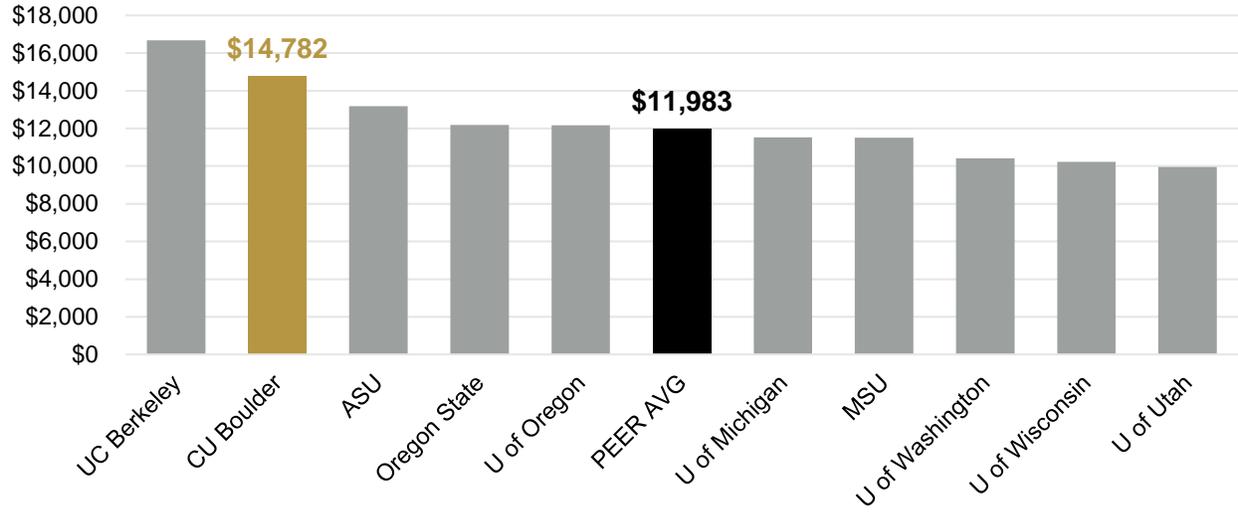
Property	Distance from campus	Unit Types	Per Person Rate*	# of Beds	Vacancy Rate
<b>U Club on 28th</b>	0.4	4 Bed - 4 bath	\$1,254	392	0%
<b>The Lotus</b>	0.3	2 Bed - 2 Bath	\$1,385	239	0%
		3 Bed - 2 Bath	\$1,345		
		3 Bed - 3 Bath	\$1,300		
		4 Bed - 4 Bath	\$1,195		
<b>The Province</b>	0.3	2 Bed - 2 Bath	\$1,430	317	4%
		3 Bed - 3 Bath	\$1,335		
		4 Bed - 4 Bath	\$1,286		
<b>Buffalo Canyon Apartments</b>	0.8	1 Bed - 1 Bath	\$1,288	175	1%
		2 Bed - 1 Bath	\$875		
<b>Sterling Apartments</b>	0.9	2 Bed - 2 Bath	\$950	342	3%
		4 bed - 2 Bath	\$1,395		
<b>The Hive at 9Seventy</b>	0.6	Studio	\$765	117	2%
		1 Bed - 1 Bath	\$2,075		
		2 Bed - 1 Bath	\$2,510		
		2 Bed - 2 Bath	\$1,418		
<b>Lofts on the Hill</b>	0.5	2 Bed - 2 Bath	\$1,486	48	0%
		3 Bed - 2 bath	\$1,443		
		4 Bed - 3 Bath	\$1,363		
<b>4 Bed - 4 Bath</b>			\$1,507		
<b>Average:</b>	<b>0.5</b>	<b>-</b>	<b>\$1,439</b>	<b>233</b>	<b>1%</b>

\*Prices include utilities.

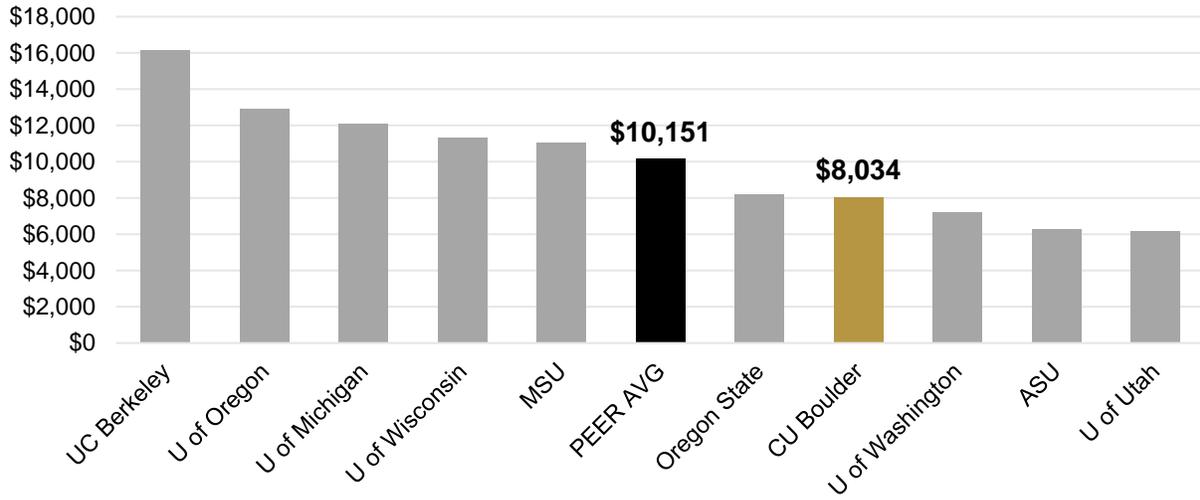
**1,640 Total**

In addition to understanding the pricing dynamics in comparison to the off-campus market, it is important to understand CU Boulder’s housing costs versus peer institutions. An interesting finding during this comparison was that while CU Boulder has the second highest average combined room and board rates among the peer group (Exhibit 20) the housing-only rates are the fourth lowest (Exhibit 21). This despite the fact that Boulder is the third most expensive housing market within this group. This finding suggests that meal plan rates for on-campus residents (required for living in residence halls) are significantly impacting the affordability of room and board. CU Boulder board rates are proportionally much higher than other comparable institutions impacting the ability for housing to charge the necessary rates to support new construction. The availability of more independent unit types (non-traditional units) on campus may allow CU Boulder to not bundle housing and board rates therefore providing the opportunity to charge necessary rates for housing new construction. The rates shown are from spring 2019.

**Exhibit 20.** Peer Pricing Comparison (Room & Board per Academic Year)



**Exhibit 21.** Peer Pricing Comparison (Room Only per Academic Year)



### 3 DEMAND OPPORTUNITIES



In order to understand campus housing preferences and the opportunity to grow the on-campus housing population, B&D utilized a proprietary model to quantify market demand by individual bed type using data from the Internet-based surveys. The surveys described a range of unit layouts, community types, amenities, and price points that allow projections to be made across cohort groups. The model projects demand under the assumption that housing will be developed to match preferences stated in the survey.

As a risk mitigation tool, an occupancy coverage ratio (“OCR”) was applied to demand projections. OCR’s represent an institution’s occupancy risk tolerance for accommodating housing demand from each cohort classification. For example, 1.20x indicates that for every 12 units of demand, building 10 units of supply is recommended. B&D applies OCR’s to the demand analysis to mitigate risk associated with enrollment fluctuations, growing off-campus competition, strategic objectives of the institution, and other factors. The OCR’s by cohort group utilized for CU Boulder, and outlined further within the Strategic Framework, are shown to the right.

#### OCCUPANCY COVERAGE RATIOS

**1.05x**

**Freshmen**

**1.10x**

**Sophomores**

**1.25x**

**Juniors**

**1.25x**

**Seniors**

**1.50x**

**Graduate Students**

**1.50x**

**Faculty & Staff**

## **On-campus housing supply has been strained by continued first-time freshman enrollment growth.**

With a first-year live-on requirement policy, the Plan assumed that demand from incoming students would remain consistent with historic capture rates among this student population. Historically they have been near 95%. Using this assumption the housing space needed to accommodate the first-year class is based on incoming class sizes. To that end, continued growth of these class sizes, without a comparable increase in supply, will yield less bed space for other cohort groups desiring to live on campus. To illustrate the point, from fall 2010 to fall 2018 CU Boulder's first-year class increased from 5,201 to 6,701, representing a 29% growth in students. Assuming a 95% freshmen capture rate, this 1,500 student increase amounts to more than 1,400 additional on-campus residents.

For fall 2019 there are approximately 6,710 first-time freshman residents (out of an incoming class of 7,100 students) in CU Boulder housing. This represents two-thirds of all residents in university housing. For the purposes of this Plan, the Project Team assumed a long-term target of approximately 7,250 first-time freshman students (utilizing campus provided enrollment projections) which equates to a need for approximately 6,900 bed spaces.

**6,900**

*first-time freshman  
bed spaces needed  
according to  
enrollment projections*

---

While any future enrollment fluctuations will obviously impact needed bed space for incoming students it is safe to say that incoming freshmen will continue to be the primary component of CU Boulder's on-campus housing inventory into the future. A comprehensive growth strategy is necessary considering that a primary objective of this Plan is to not only improve the housing options for incoming students but expand offerings for other members of the campus community.

## **Market demand supports strategic objectives to grow housing offerings for returning undergraduate students.**

To understand the opportunity to increase housing capture rates among non-freshman students, B&D developed target markets that are reflective of those students most likely to reside in one of the survey tested housing options if they were provided as a part of CU Boulder's on-campus inventory.

B&D utilizes target markets to help the predictive analytics of the demand modeling so that only those students with the highest probability are included in the projections. Survey respondents had to meet all the criteria within one of the following target markets in order to be included. Please note that while the same target markets were used for students with families this demand was projected separately.

**Target Market A**  
 Full-time Student  
 Single without children



**Target Market B**  
 Full-time Student  
 Single without children  
 Renting their current living unit  
 Pay at least \$900 per month in rent  
 (individual share)

Utilizing this methodology, the projections show that demand opportunity supports CU Boulder’s desire to grow housing offerings for non-freshman undergraduates. Demand analysis results showed considerable unmet demand for this group with excess demand of over 3,000 beds at current enrollment levels.

Significant growth opportunities exist among all non-freshman undergraduates with the demand analysis suggesting the ability to more than double current capture rates across all class levels. These projected capture rates exceed the University’s initial targeted capture rates. It is also worth noting that since this housing shortfall is based upon current enrollment levels then the shortfall will increase if enrollment projections are met.

**Exhibit 22.** *Current vs. Projected Demand*

	CURRENT (FALL 2019)			DEMAND	
	Fall 2019 Enrollment	Capture Rates	Residents	Capture Rates	Residents
First-Time Freshmen	7,100	95%	6,711	95%	6,711
Sophomores + Returning Freshmen	8,497	10%	892	27%	2,292
Juniors	6,361	7%	476	22%	1,383
Seniors	7,790	7%	531	16%	1,265
<b>TOTAL UNDERGRADUATES</b>	<b>29,748</b>	<b>29%</b>	<b>8,610</b>	<b>39%</b>	<b>11,651</b>

The findings of the demand analysis for undergraduate students is positive in that it suggests the ability for the institution to grow the residential population according to the stated strategic objectives. However, this Plan does not suggest that the institution fully build up to these demand levels within the near future.

The overall housing strategy and how to meet this unmet demand within a feasible manner will be discussed further in this Plan as it is reconciled with financial feasibility, investment needs within existing facilities, and institutional will, among other factors.

## Undergraduate students are generally desiring greater unit type diversity over the current on-campus housing inventory.

To understand demand, a variety of unit types were tested including traditional, semi-suite, and apartment options. No suite-style units were tested. The survey also tested co-living units that could provide the flexibility and affordability criteria CU Boulder intends to meet. Co-Living units are hybrid living options that generally provide in-unit bathrooms along with more shared amenities such as living room space and kitchens across a floor or community. The bedrooms can be either private or shared.

**Exhibit 23.** *Co-living Unit Floor Plan*



**CO-LIVING** incorporate a higher number of students allocated around a larger common area. Shared spaces include kitchen, living spaces and could include other supporting spaces like study, laundry and storage areas. Bathrooms are typically private accessed from the bedroom unit but can be also be semi-private, shared between two units. Second and third year students, who generally have more established social networks and need less access to support typically thrive in this type of residential experience.

In addition to total demand projected by cohort group, the demand methodology allowed B&D to see individual unit type preferences. This allows for an understanding of how the existing inventory may or may not need to be converted, retrofitted, or replaced in order to meet student demand.

Exhibit 24 shows this breakdown by class across the major unit types. For undergraduates, the results showed a desire for more independence and diversity.

There is a clear over-supply of traditional-style housing options based on student preferences. Additionally, despite a premium for single-occupancy bedrooms there is greater demand for private rooms versus shared rooms. These findings are consistent with what was heard during student focus group sessions.

**Exhibit 24.** Undergraduate Student Unit Type Demand

Class Cohort	Traditional	Semi-Suite	Apartment	Co-Living Unit
First-Time Freshmen	4,013	2,698	0	0
Sophomore + Returning Freshmen	178	102	1,685	327
Junior	74	99	1,015	196
Senior / Other	55	63	1,029	118
<b>TOTAL DEMAND</b>	<b>4,320</b>	<b>2,962</b>	<b>3,729</b>	<b>640</b>
Existing Undergraduate Beds	6,239	1,171	1,200	0
<b>Surplus/(Deficit)</b>	<b>1,919</b>	<b>(1,791)</b>	<b>(2,529)</b>	<b>(640)</b>

The desire for more independence was also indicated by students when asked what would attract them to live on-campus. Exhibit 25 shows which features would have attracted undergraduate students to live on campus. The availability of a private bedroom and the opportunity to cook their own meals are clearly the top two responses. These two factors are attractive because they allow students to have greater independence and typically eliminate the added cost of a meal plan.

While survey demand appears to indicate a desire for greater housing options in non-traditional units, recent studies have shown the benefit traditional residential layouts can have on student success and well-being. One recent study notes "...that some parents believe that apartment-style living spaces -- as opposed to the more traditional rooms lined down a single corridor -- will benefit their children. But many students find the apartments make them lonely, despite giving them more privacy and space".<sup>2</sup> Student success and well-being will be important for CU Boulder to consider as they balance student desires with creating communities that support academic achievement and success.

<sup>2</sup> Jeremy Bauer-Wolf, "How Dorm Rooms Can Affect Grades," Inside Higher Ed, June 21, 2019, <https://www.insidehighered.com/news/2019/06/21/study-shows-how-different-types-college-dormitories-can-affect-grades>

**Exhibit 25.** Off-Campus Undergraduate Student Preferences

**54%**

*of undergraduates living off campus would have been attracted by a private bedroom*

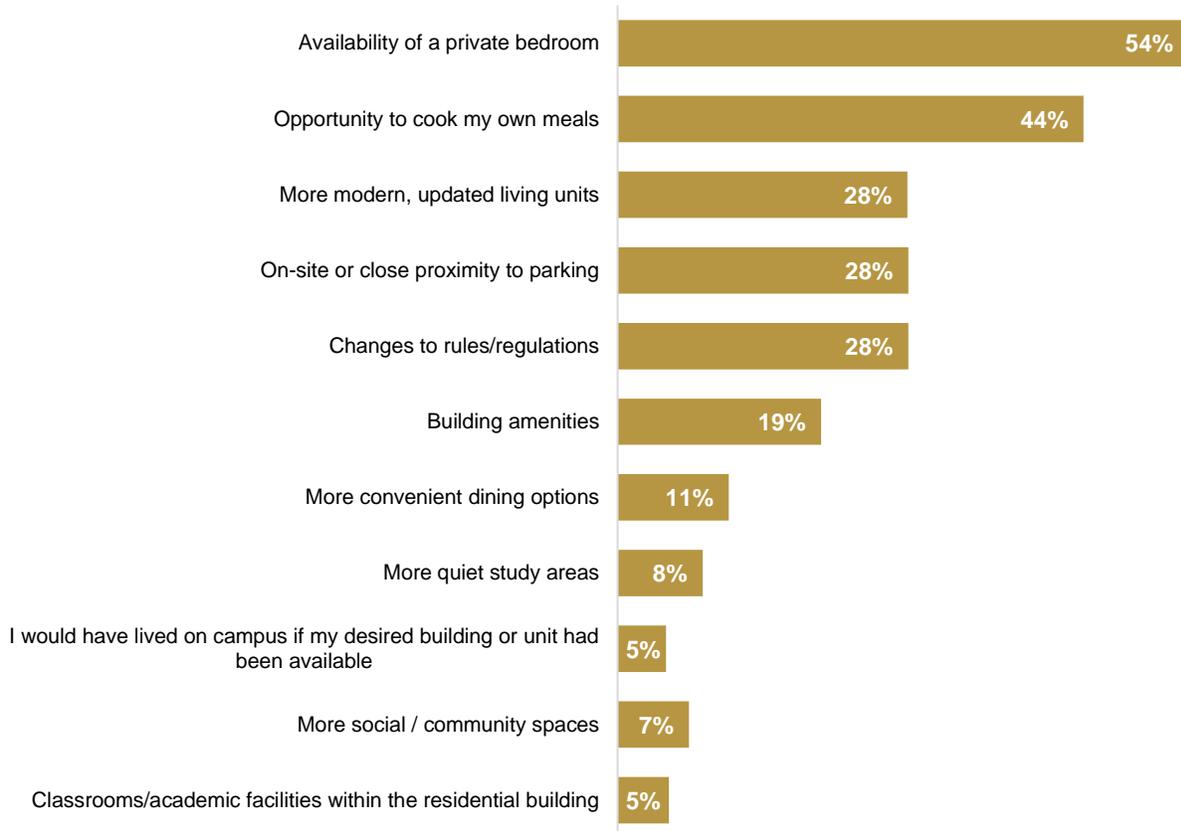
**44%**

*of undergraduates living off campus would have been attracted by the opportunity to cook their own meals*

**28%**

*of undergraduates living off campus would have been attracted by modern, updated units*

**What Would Have Attracted You to Living on Campus?**

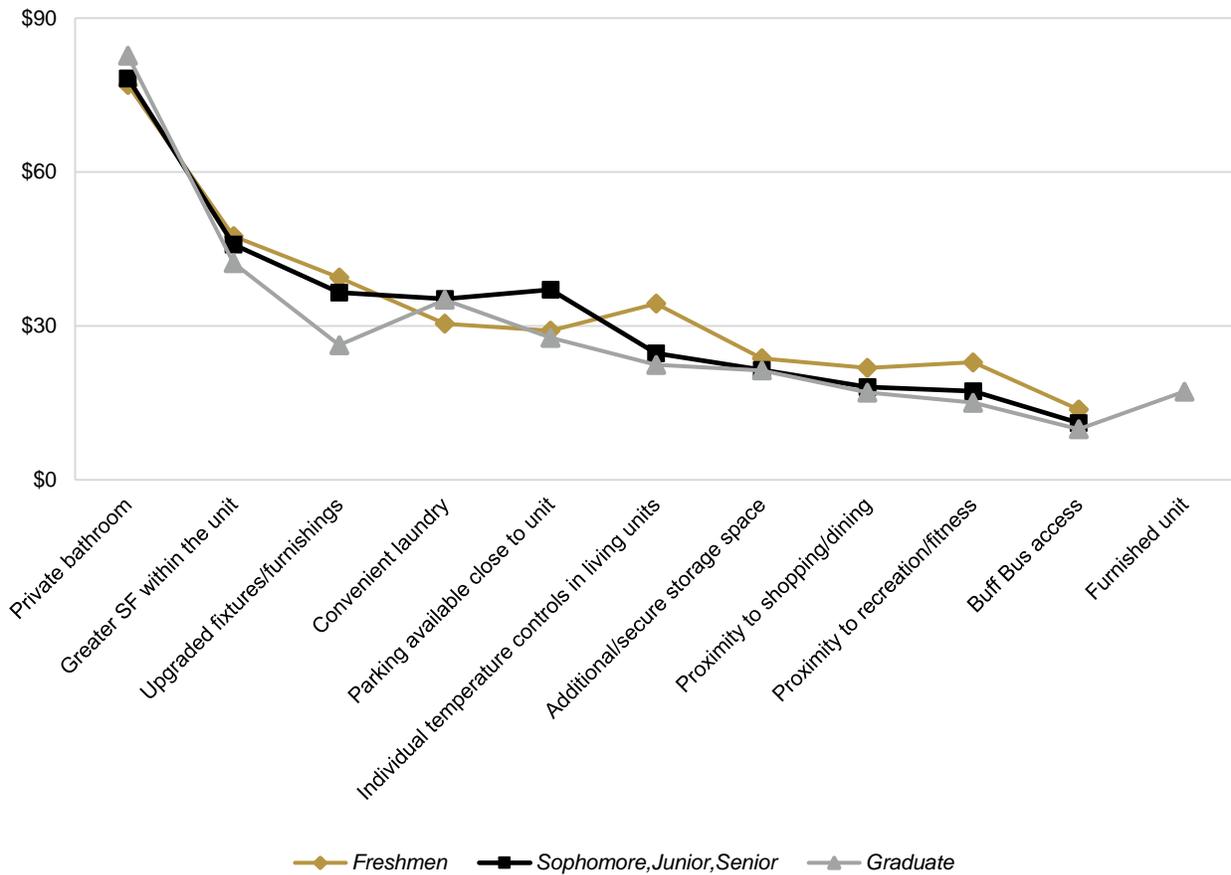


Furthermore, most students expressed a willingness to pay additional money beyond rent for desired features. The most popular feature indicated by students across all cohort groups was a private bathroom, which is currently a limited feature at CU Boulder. The second most popular feature was greater space within a unit.

These two aspects again speak to the students' desire for more independence and diversity of living options.

Units with these two features are currently available off campus and are influencing students to live in the off-campus market. Preferences for these features were generally consistent across student cohorts, however, graduate students appeared less likely to pay for the added amenities or features.

**Exhibit 26.** Willingness to Pay for Additional Features (per month)

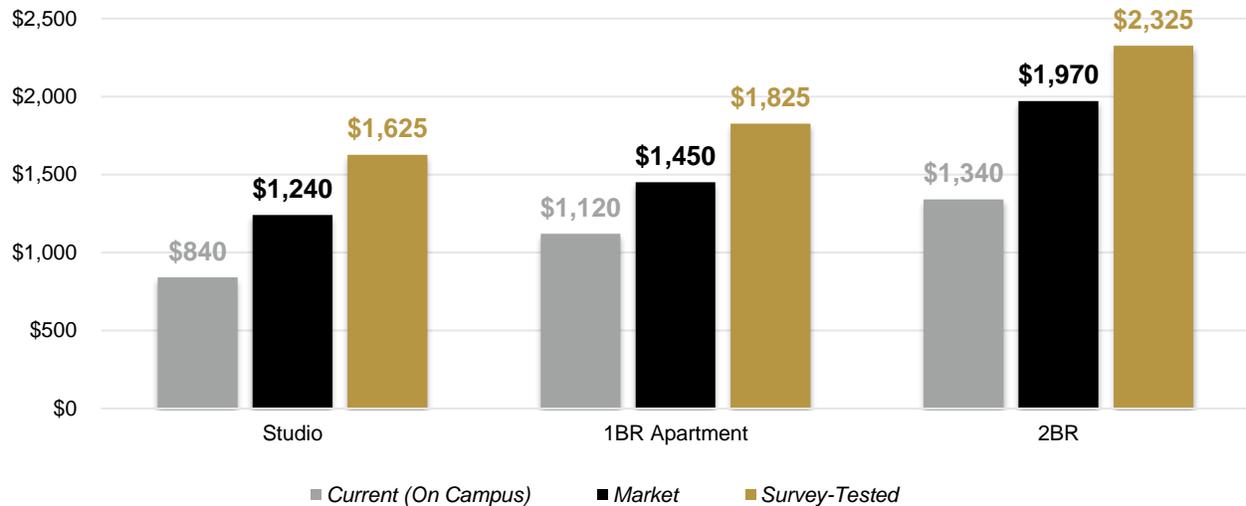


**Limited opportunity to expand on-campus graduate and family student housing inventory at price points likely to support new construction.**

In contrast to the undergraduate student demand findings, graduate students and students with families showed more limited demand for the tested on-campus housing options. The demand from graduate students and students with families was actually slightly less than the current on-campus population among this group. While this may sound counterintuitive, it is driven by the fact that new housing for this cohort group will need to be priced at a significant premium, at initial assumptions, over the existing inventory to support the financial feasibility. This cost sensitivity was also shown in the survey and focus groups as graduate students indicated a willingness to live farther from campus to pay less for housing.

Graduate and Family Housing options, while in high demand and high occupancy, are currently priced below market rates and, in many cases, significantly under the rental rates needed to support new construction (i.e. debt service burden, operating expenses) using campus standards. This suggests that while there is a desire for additional graduate student housing options, the underlying economics do not support a full redevelopment on a standalone basis. Exhibit 27 helps illustrate this point showing the gap between new construction (“survey-tested”) rates and the existing rental rates.

**Exhibit 27.** Graduate, Family, and Staff Housing Rates Comparison

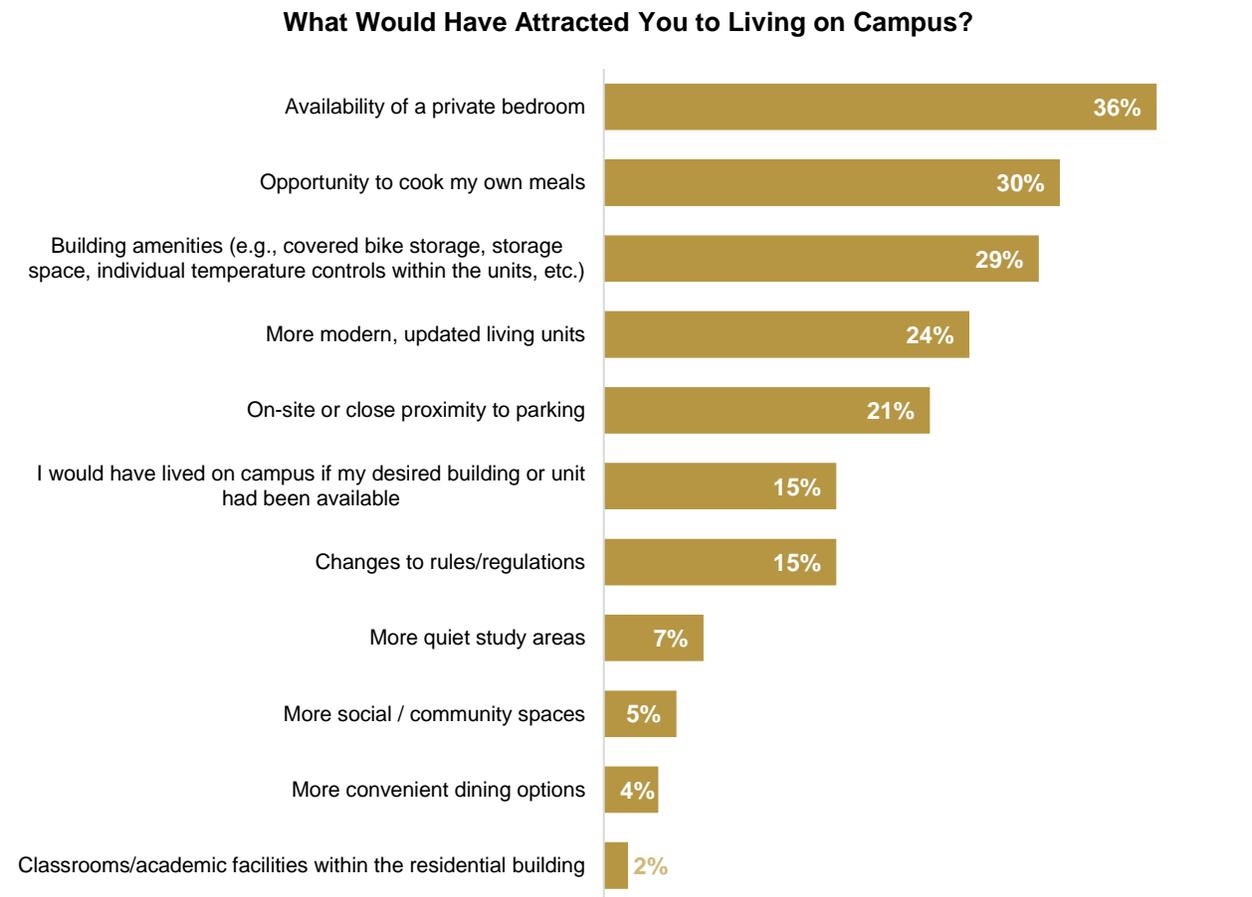


Unit preferences from graduate and family students suggest a desire for additional studio apartments and co-living options (not in CU Boulder’s existing inventory). These options are attractive because they still provide a level of privacy desired by this group but do so in a higher density setting that allows for more shared space and affordable rents. Co-living options and micro-unit apartments are worth consideration for the ability to accommodate single graduate students, and potentially faculty and staff, at more reasonable price points.

Exhibit 28 shows which features would have attracted graduate students to live on campus. Similar to the undergraduate students, the desire for independence and diversity are important to graduate students. Graduate students also indicated that the availability of a private bedroom and the opportunity to cook their own meals are the top two factors that would attract them to live on campus. The third most attractive feature (behind the opportunity to cook their own meals) was building amenities, which was the sixth most attractive feature for undergraduate students. This may indicate that as students mature they desire and appreciate more physically comfortable features in their immediate environments.

Additionally, a greater percentage of graduate students (15% of graduates compared to 5% of undergraduates) indicated they would have lived on campus if their desired building or unit was available. This reinforces the desire for diversity in CU Boulder housing offerings among graduate students.

**Exhibit 28.** *Off-Campus Graduate Student Preferences*



36%

*of graduate students living off campus would have been attracted by a private bedroom*

---

30%

*of graduate students living off campus would have been attracted by the opportunity cook their own meals*

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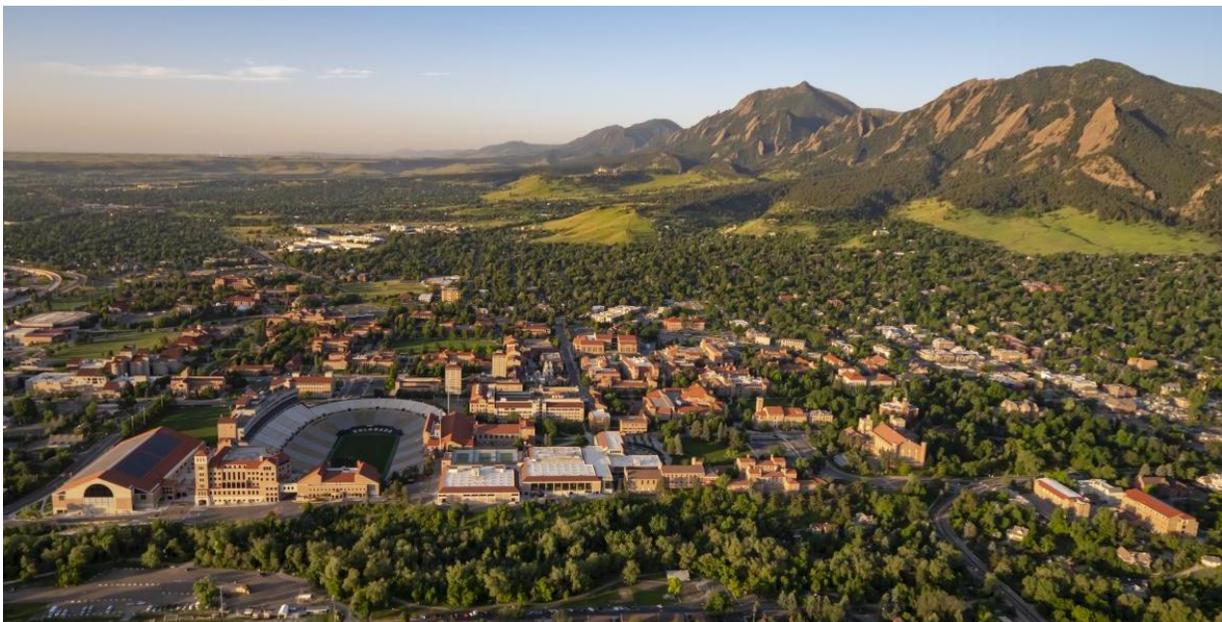
15%

*of graduate students would have lived on campus if their desired building or unit had been available*

---

The findings among this cohort group suggest an opportunity exists for new / improved graduate and family student housing may potentially be supported by the market. However, a holistic strategy is required to improve housing offerings for this important cohort group while adhering to the Plan's financial objectives. Regardless of the scenario chosen by CU Boulder accessibility needs in housing need to be addressed. The following general strategies should be considered and will be discussed further later on in this Plan.

- 1 Maintain existing affordable options while strategically reinvesting in these assets (including accessibility upgrades);**
- 2 Subsidize new graduate housing options through other revenue streams or capital support;**
- 3 Limit supply of on-campus graduate housing and rely on private market to address need.**



**Faculty and staff show high interest levels in any CU Boulder- sponsored housing programs and an opportunity may exist for expanded transitional rental options among newer faculty members.**

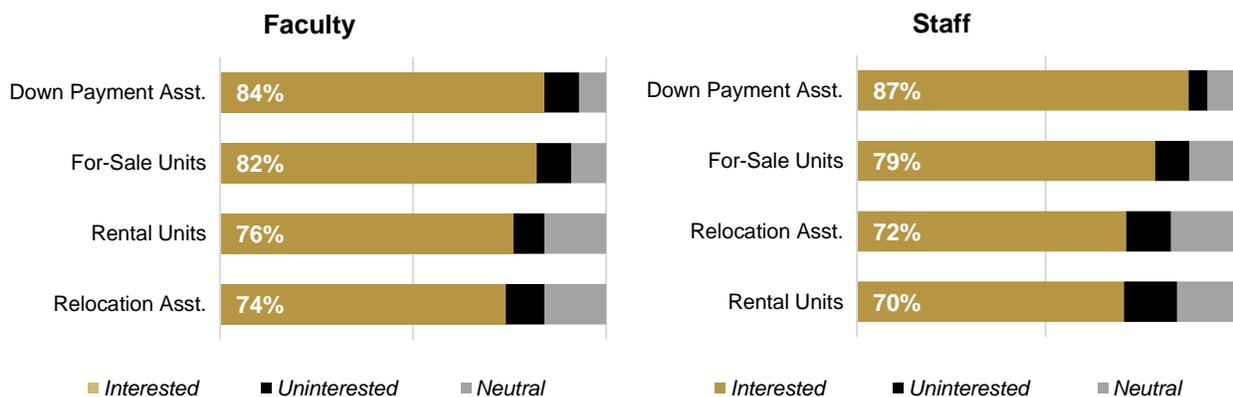
A variety of apartment configurations and a co-living unit were tested for faculty and staff to determine interest in rental housing. Survey tested rates were for unfurnished units, however, they were inclusive of all utilities. For context, a general description of the rental unit options is provided below:

- ◆ Apartments include a full kitchen, living area, and a variety of bedroom options, ranging from an efficiency studio apartment to a multi-bedroom and/or multi-occupancy layout.
- ◆ Co-Living units are hybrid living options that generally provide in-unit bathrooms, however, offer greater shared amenities such as living room space and kitchens across a floor or community. The bedrooms can be either private or shared.

The majority (78%) of faculty and staff indicated it was important to own a home, and those faculty and staff indicating interest in for-sale housing were shown multiple unit types and amenities. As the nature and design of a for-sale housing program is complicated and significantly depends on the individual(s) purchasing the home, no costs were provided for the for-sale unit types tested on the survey. In addition, the survey tested interest in two potential housing financial assistance program offerings from the University. A University-sponsored down payment assistance program would subsidize down payments for home purchases and a relocation assistance program would provide a stipend or general support for new faculty and staff to relocate or general support in finding housing options.

Generally interest for all four housing programs was higher among faculty than staff. Down payment assistance and for-sale housing garnered the highest interest levels among both cohorts. Exhibit 29 shows the interest levels in University-sponsored housing programs among both CU Boulder faculty and staff.

**Exhibit 29.** Interest in University-Sponsored Housing Programs



A methodology similar to that used for students was undertaken to determine faculty and staff demand for CU Boulder rental housing. While significant interest was expressed in the survey for for-sale housing options to this population, for the purposes of this Plan the Project Team assumed rental housing would be the primary focus.

However, based on the housing market conditions, faculty and staff interest, and campus landholdings the University may want to prudently revisit this option of for-sale housing in the future. The target market for the rental housing population was developed using the following criteria:

- ◆ Current faculty or staff member at CU Boulder,
- ◆ Expressed interest in a CU Boulder-affiliated rental housing option,
- ◆ Currently rent on or off campus, and
- ◆ Considering renting their next residence.

An additional step for assessing faculty and staff housing demand involved setting a housing burden and income threshold. Based on industry standards for income percentage that should be devoted to housing costs, thresholds of 35% and 40% were tested. Meaning that in order to be included in the demand projections an individual would need to have reported an income level such that no more than 40% of their income would be devoted to the tested housing rates.

The same calculation was used to assess the income threshold for each unit type tested and based on the survey respondent’s income selections, they were removed from the demand analysis if they did not meet the specified income threshold. Exhibit 30 illustrates in more detail.

*Exhibit 30. Housing Burden and Income Threshold*

	TESTED UNIT TYPE				
	Studio	1BR / 1BA	2BR / 1BA	3BR / 2BA	Co-Living
<b>Tested Survey Rate</b>	\$1,500	\$1,700	\$2,100	\$2,600	\$900
<b>Tested Survey Rate Annually</b>	\$18,000	\$20,400	\$25,200	\$31,200	\$10,800
<b>Annual Income Threshold (35% Housing Burden)</b>	\$51,429	\$58,286	\$72,000	\$89,143	\$30,857
<b>Annual Income Threshold (40% Housing Burden)</b>	<b>\$45,000</b>	\$51,000	\$63,000	\$78,000	\$27,000

*NOTE: To maintain a housing burden below 40% at the rates we tested, an individual would need to make \$45,000 if choosing to rent a studio apartment.*

Since faculty and staff currently reside within CU Boulder's Graduate & Family Housing portfolio, the demand was combined with the graduate and family student demand to understand the holistic needs. These populations also exhibit similar preferences making it appropriate to view from a combined standpoint. Based on that, it was determined the University currently has a surplus of one-bedroom and two-bedroom units. Demand exists for unit types that offer more space and additional bedrooms.

**Exhibit 31.** Graduate, Family Student, Faculty and Staff Unit Type Demand

Class Cohort	Studio Apartment	1BR Apartment	2BR Apartment	3BR Apartment	Co-Living Unit	TOTAL
<b>Graduate &amp; Family Students</b>	108	115	184	16	58	<b>481</b>
<b>Faculty</b>	14	29	159	59	0	<b>261</b>
<b>Staff</b>	2	11	36	13	0	<b>62</b>
<b>TOTAL DEMAND</b>	<b>124</b>	<b>155</b>	<b>379</b>	<b>88</b>	<b>58</b>	<b>804</b>
<b>Existing Units*</b>	48	298	471	24**	0	<b>841</b>
<b>Surplus/(Deficit)</b>	<b>(76)</b>	<b>143</b>	<b>92</b>	<b>(64)</b>	<b>(58)</b>	<b>37</b>

\*Bed count includes designated graduate and family units only, including Athens North for Fall 2019

\*\*Bed count includes one four-bedroom apartment

The overall demand analysis for graduates, family students, faculty, and staff shows a slight excess demand at survey-tested options. This is primarily driven by faculty. Affordability and income thresholds minimized demand among graduates, family students, and staff.

**Exhibit 32.** Combined Demand

Class Cohort	Demand	Current Residents	Excess Demand
<b>Graduate &amp; Family Students</b>	481	486	<b>(5)</b>
<b>Faculty</b>	261	189	<b>72</b>
<b>Staff</b>	62	72	<b>(10)</b>
<b>TOTAL DEMAND</b>	<b>804</b>	<b>747</b>	<b>57</b>

The majority of this demand for rental housing is from those CU Boulder employees who currently rent. As expected, current home owners are far less likely to consider renting their next residence than current renters. The survey also was able to show demand for a CU Boulder housing option by different demographic characteristics.

Exhibit 33 shows the comparison in interest for a for-sale or rental option by income and age. Preferences are generally consistent across different demographic groups, however, there appears to be more interest for a rental housing option among younger faculty or staff who are newer employees at CU Boulder. This highlights the possible support for a transitional housing option while those employees new to Boulder navigate the housing market.

**Exhibit 33.** *Housing Interest by Income / Age*

CU BOULDER HOUSING OPTION	HOUSEHOLD INCOME		AGE	
	Under \$100k	Over \$100k	Under 40	Over 40
Interest in For-Sale Options	83%	79%	79%	83%
Interest in Rental Options	72%	72%	73%	69%

When asked to identify the most important factors when deciding on housing, both faculty and staff identified cost, quality of housing, and travel time to campus as the top three factors. This highlights the potential interest in these housing options as convenient especially for those new to the market. Cost continues to be the most important driver as approximately 80% of both faculty and staff indicated housing costs as a critical influencing factor on their decision to stay at CU Boulder. Exhibit 34 displays the considered factors for both cohorts.

**Exhibit 34.** *Most Important Decision Factors on Where to Live*

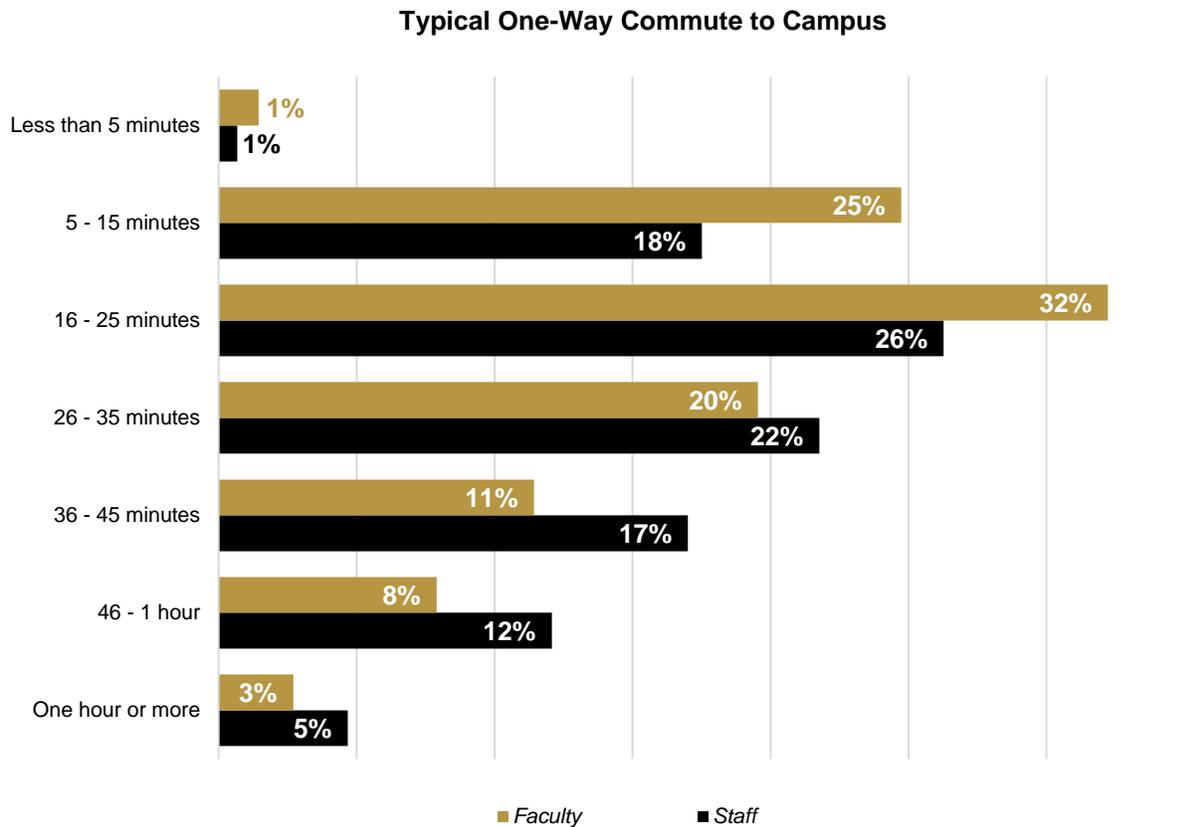
FACULTY	STAFF
1 Total cost of rent	Total cost of rent
2 Quality of housing	Quality of housing
3 Travel time to campus	Travel time to campus
4 Ability to use alt. forms of transportation	Size of housing
5 Size of housing	Proximity to parking
6 Proximity to parks / recreation areas	Ability to use alt. forms of transportation
7 Ability to own my own home	Proximity to parks / recreation areas
8 Proximity to parking	Ability to own my own home
9 Access to campus facilities, resources, and amenities	Access to campus facilities, resources, and amenities
10 Proximity to relatives / friends	Proximity to relatives / friends
11 Location within certain school districts	Living in building with enhanced security features
12 Living in building with enhanced security features	Location within certain school districts
13 Proximity to child-care	Proximity to child-care

As previously indicated the travel time to campus is also a critical decision factor for housing among both faculty and staff. When asked about one-way commute times, 56% of CU Boulder faculty indicated they travel 25 minutes or less to campus while 45% of the staff commute 25 minutes or less to campus. Exhibit 35 shows the typical one-way commute times to campus. Nearly half of CU Boulder’s faculty and staff have an approximately one hour daily roundtrip commute to the campus.

**56%**

*of CU Boulder faculty travel 25 minutes or less to campus*

**Exhibit 35.** One-Way Commute Time to Campus by Cohort



The cost of CU Boulder’s housing, with typically below market rates, and the convenience of proximity to campus resources appear to be the main drivers of CU Boulder’s demand for faculty and staff housing.

**Exhibit 36. Residential Neighborhoods**



**Future development sites exist on CU Boulder campus to support housing growth opportunities.**

Multiple site options were assessed as a part of the Plan for their viability to support expanded housing offerings. The Project Team believes there are sufficient opportunities to advance the growth objectives within the current campus footprint.

As highlighted within the Strategic Framework, key considerations for any new development options should include neighborhood creation, appropriate community sizes, and additional support services / resources. Additionally, the Plan must prioritize the development of swing space at the outset prior to addressing maintenance and/or renovation or demolition of existing facilities.

Development opportunities and neighborhood summaries are as follows:

**KITTREDGE COMPLEX**

- ◆ High density neighborhood with small and successful communities.
- ◆ Several development sites that exist on the periphery of this neighborhood offer opportunity to create a better link to campus core and / or Williams Village. Eastern sites help create a gateway along HWY 36 and promote connectivity to Williams Village at a difficult edge.

- ◆ Any new development, however, would reduce desirable recreation or open green space. Would need to proceed cautiously to not detract from success of neighborhood.

## MAIN CAMPUS

- ◆ Highest density residential location that offers limited opportunity for infill development or residential population growth.
- ◆ Existing student resources, services, and amenities are strained at current residential populations.
- ◆ Renovations could decrease bed count in order to increase community spaces.
- ◆ Given the physical condition and low-rise structure of the Engineering Quad communities (Aden, Brackett, Crosman, Cockerell, and Reed), this location offers a possible redevelopment site with higher-density facilities.
- ◆ Any new development or renovation projects must retain campus core character and preserve outdoor space.
- ◆ Major utility infrastructure needs must be addressed in alignment with renovation schedule.
- ◆ Address accessibility/ADA compliance deficiencies.

## WILLIAMS VILLAGE

- ◆ Newest residential neighborhood that offers many amenities and open space. Less connected to academic and campus life spaces.
- ◆ Opportunity to activate ground plane with academic / mixed-use / amenity spaces that create community and link buildings.
- ◆ Extend development towards corner of Baseline and 30th Street to extend Williams Village towards campus and develop strong urban edge. A better campus entry / street edge could help make this campus an independent destination.
- ◆ Multiple sites offering housing growth opportunities should be preserved depending on future university plans.
- ◆ Renovations of Darley and Stearns are needed soon. Need a better blend of unit typologies and these buildings are strong candidates for suite / apartment conversions.

## NORTH OF BOULDER CREEK

- ◆ This neighborhood offers the most opportunity for increased density and residential growth.
- ◆ Existing residential communities provide future redevelopment opportunities and ability to add density.
- ◆ Location on campus periphery makes this a good neighborhood to house a variety of cohort groups with the exception of first-time freshman residents.
- ◆ Several open sites exist that could launch the implementation of the Housing Master Plan.

- ◆ Newton Court, Athens Court, and Faculty Court could be phased to replace existing low-density housing with higher density housing. These buildings have significant maintenance backlog and are past their serviceable life.
- ◆ Floodplain requirements must be respected with any site redevelopment strategy.
- ◆ Must address accessibility/ADA compliance deficiencies as no apartments currently comply.

### EAST CAMPUS

- ◆ Significant housing expansion opportunities exist on the East Campus.
- ◆ Long-term East Campus strategy, driven by Campus Master Plan, will impact the role housing plays in this neighborhood.
- ◆ Growth in residential population will drive need for associated support facilities and resources not currently available.
- ◆ Replace existing Smiley Court to take advantage of visibility of corner and develop mixed-use buildings.
- ◆ Suggest and verify proper road alignments that facilitate smart planning and proper phased solutions.
- ◆ Must address accessibility/ADA compliance deficiencies as part of any major renovation or new construction project.

### CU BOULDER SOUTH CAMPUS

- ◆ Standalone campus that could serve faculty, staff, upper-division student, graduate student, and community housing needs.
- ◆ For the purposes of this Plan, the Project Team assumed 1,100 units of CU Boulder housing would be developed over time at this site but has been evaluated separately from the planning scenarios. Further discussion of this housing opportunity is available in Appendix G.

## 4 INVENTORY MODERNIZATION

### **CU Boulder has an aging housing inventory that will require significant reinvestment to maintain a baseline standard of quality.**

CU Boulder provided the Project Team with existing building conditions information for review as a part of this Plan. Included were the following assessments:

- ◆ **Facility Condition Index (FCI):** ratings based on previous studies and observations.
- ◆ **CU Boulder Performance Score (FPI):** ratings based upon CU Boulder day-to-day operations and facility expertise, the performance score was assigned to each facility outlining the current state of the property and deferred maintenance needed. Priority status was then assigned to each neighborhood relative to its condition and need of repair or replacement. While not directly correlated with campus FCI thresholds, FPI scores offer further criteria to help evaluate residential facilities.

Housing Facilities developed the proprietary FPI score to help understand the performance of the building systems in residential buildings. These FPI ratings are the result of the first year of this new rating model and will continue to be refined with subsequent year evaluations and investments.

Although these ratings do not use the same basis nor draw exact conclusions, the information combined with actual observations and discussions with CU Boulder staff provides a framework of which to establish the actual condition of the building, the work needed to provide for the future occupants, and a general long-term approach related to overall housing plan implementation.

#### **FPI (1-3) / FCI (0-85): IMMEDIATE / CRITICAL**

Buildings in this category require immediate action to:

- ◆ Correct a cited safety hazard
- ◆ Stop accelerated deterioration and/or return a facility to normal operation

#### **FPI (4-7) / FCI (85-95): IMPENDING / NEEDED**

Buildings in this category include actions that must be addressed in the short-term:

- ◆ Repairs to prevent further deterioration
- ◆ Improvements to facilities associated with critical accessibility needs
- ◆ Potential safety hazards

#### **FPI (8-10) / FCI (95-100): EVENTUAL / NON-CRITICAL**

Buildings in this category include:

- ◆ Improvements to facilities associated with non-critical accessibility needs

- ◆ Actions to bring a facility into compliance with current building codes as grandfather clauses expire
- ◆ Actions to improve the usability of a facility following an occupancy or use change

Exhibit 37 shows a summary of the ratings for all housing facilities based on the FPI and FCI.

*Exhibit 37. Housing Facility Condition Data*

	Name	Building Performance Score (FPI)	Facility Condition Index (FCI)
Main Campus	Aden	2.00	82
	Baker	10.00	100
	Brackett	1.50	83
	Cheyenne - Arapaho	2.00	85
	Cockerell	1.50	82
	Crosman	1.75	82
	Farrand	1.50	83
	Hallett	3.00	84
	Libby	2.00	86
	Reed	1.00	79
	Sewall	1.00	42
	Willard	2.50	86
Kittredge	Andrews	8.00	100
	Arnett	7.50	100
	Buckingham	8.00	100
	Kittredge Central	9.00	100
	Kittredge West	8.00	100
	Smith	8.00	100
Williams Village	Bear Creek	7.00	99
	Darley North	7.00	79
	Darley South	7.00	80
	Stearns East	4.00	75
	Stearns West	4.00	75
	Weber	6.50	99
	Will Vill North	9.00	100
	Will Vill East	10.00	100
Graduate & Family Housing	Athens Ct	3.50	70
	Athens North	7.00	83
	Faculty Court	4.00	83
	Marine Court	5.00	59
	Newton Court	5.50	84
	Smiley Court	3.50	83

As can be seen from this summary, the majority of Main Campus residence halls (with the exception of Baker Hall) will require attention to address facility concerns. This should not come as a surprise as this

neighborhood contains many of the oldest housing facilities on campus with an average age of over 70 years old.

Additionally, many North of Boulder Creek communities will require significant renovations or replacement based on this information. While not as old as Main Campus residence halls, many of these facilities were built to lower construction standards than seen on the core campus, leading to greater deterioration.

**In addition to issues with physical condition, many residence halls lack the appropriate community and social spaces to foster engagement and student success.**

As a part of the facility assessment conducted on CU Boulder's current inventory, the Project Team analyzed the spaces within each individual building. The intention of the assessment was to verify that each building has appropriate space to support community building.

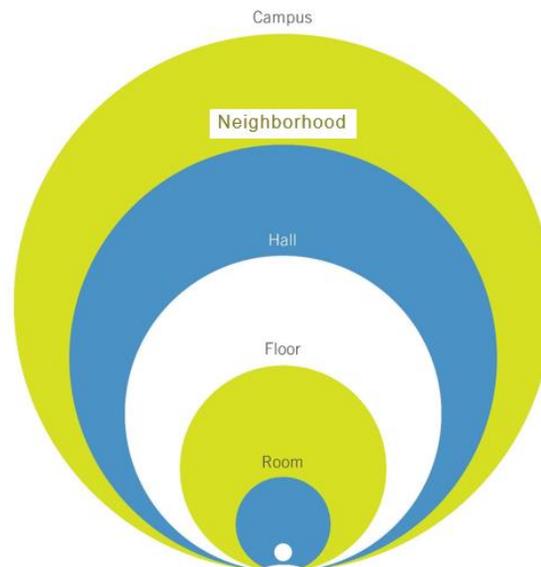
This was examined at five levels of community which include the room, floor, hall (building), neighborhood, and campus as illustrated in Exhibit 38.

One strategy utilized to assess how current facilities support community-building goals is to analyze available "outside-the-unit" space. "Outside-the-unit" space encompasses all building square footage not contained within a resident bedroom.

The Project Team classified each room in campus housing facilities to calculate the percentage of space devoted to community building. "Outside-the-unit" space includes, but is not limited to, programmed common spaces like floor and building lounges, laundry areas, study spaces, kitchens, classrooms, staff offices, and storage areas.

The percentage of "outside-the-unit" space in the existing housing was averaged together to create a metric that could be benchmarked against facilities constructed recently at other higher education institutions. The benchmark averages are gathered from Ayers Saint Gross' database of residence halls designed across the country.

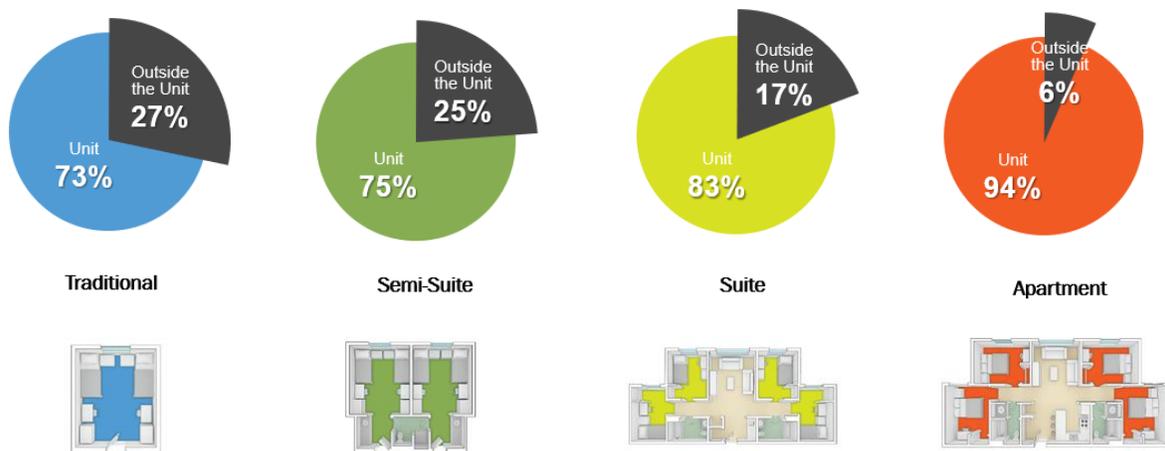
*Exhibit 38. Five Levels of Community*



This assessment revealed how CU Boulder compares to national standards and where improvements could be made as buildings are renovated or replaced in the future.

As shown in Exhibit 39, these national standards are different depending on the type of housing facility. Traditional and semi-suite halls, where residents have little social space inside their units, require a significant amount of shared space devoted to amenities that support community building, while suite and apartment halls require less shared spaces as there is more social space within the unit.

**Exhibit 39.** “Outside-the-Unit” Space Standards



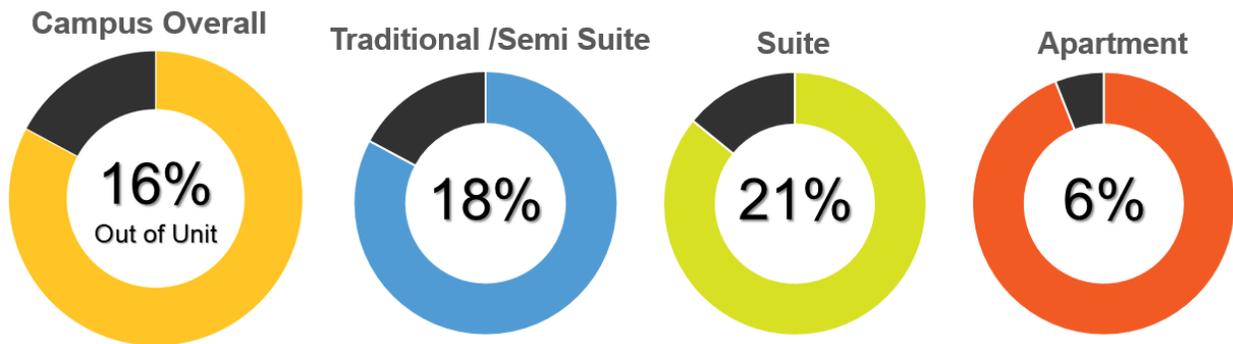
When analyzing CU Boulder’s current inventory, the Project Team found that shortfalls exist. These shortfalls are seen most significantly within the traditional & semi-suite residence halls. Please note that for the purposes of this comparison (Exhibit 40), traditional & semi-suite halls were combined due to similar “outside-the-unit” space goals for these facility types. While CU Boulder’s apartment facilities and suite complexes (limited supply) are sufficient with these types of spaces, the residence halls comprise the majority of CU Boulder’s inventory. At a neighborhood level, Williams Village facilities show the largest shortfall with these spaces offering approximately 16% “outside-the-unit” space (Williams Village Center space is not included in the inventory). Main Campus buildings are next with 18% followed by Kittredge Complex with 20%. All of these neighborhoods fall below 25% - 27% which is the national standard.

This shortfall highlights that many residence halls may lack the amount of space to support successful community-building, social interactions, and academic success that are key objectives of the housing program. Both community inclusive ground level spaces and community exclusive upper level spaces are an important component of student-based success. Scalable community areas should be available at all levels of the hall to accommodate the differentiating scales of interaction throughout the community.

16%

*“outside-the-unit”  
space in Williams  
Village, below the  
standard 25-27%*

**Exhibit 40.** CU Boulder “Outside-the-Unit” Space by Building Type



In addition to assessing all “outside-the-unit” space, the Project Team compared space metrics per unit type in comparison to national standards. Exhibit 41 shows gross square feet per bed targets for all the unit types offered in the housing inventory. Comparing the existing situation to these targets further illustrates the lack of sufficient space to support the type of environment desired by CU Boulder. Additional data related to specific spaces and “outside-the-unit” area by individual building is available in Appendix B.

**Exhibit 41. Housing Space Comparison (Inclusive of All Rooms and Common Spaces)**



While providing adequate community-building space is an important goal of this Plan, CU Boulder must also be cognizant of the impact this may have on construction cost and affordability. These benchmarks provide valuable insights into the housing system but are not the only metric to consider as new or renovation projects occur.

**Addressing community space shortfalls in combination with facility condition needs will reduce housing supply.**

Based on the Project Team’s facility assessment and review of CU Boulder-developed facility ratings it is apparent that a substantial number of existing housing facilities will require renovation or replacement. As stated earlier, the majority of these facilities exist on the Main Campus or North of Boulder Creek neighborhoods. Given various factors with the Main Campus residence halls (in particular those around Farrand Field) including their architectural significance, campus core locations, and site constraints, it is assumed that a series of renovations will occur at these facilities to address the identified challenges. Replacement was considered for the Farrand Field halls but is not recommended at this time given the factors outlined along with the financial strain this would place on the housing system. The specific phasing will be discussed further in the planning scenarios / implementation strategy portion of this Plan, however, the general approach is shown below.

**Exhibit 42.** *Main Campus Residence Halls Approach*

	<b>Facilities</b>	<b>Proposed Strategy</b>	<b>Current Bed Supply</b>
<b>Farrand Field Residence Halls</b>	Cheyenne-Arapaho, Farrand, Hallett, Libby, Willard	Comprehensive Renovation	2,167
<b>Quad Complex</b>	Aden, Brackett, Cockerell, Crosman, Reed	Replace or Repurpose*	575
<b>Sewall Hall</b>	-	Comprehensive Renovation or Repurpose*	330

*\*Non-Housing Use*

It is the recommendation of the Project Team that as the renovations occur, community space shortfalls are addressed through programmatic adjustments. While the renovations are necessary to allow for an improved resident experience any changes that create “outside-the-unit” space will likely result in a loss of bed spaces.

For planning purposes the Project Team has used a high-level assumption of 5% reduction in available beds per renovation project. This bed loss assumption serves as a placeholder until detailed renovation plans per building are developed. Over the course of a series of these projects the bed loss may be significant impacting the ability to grow the on-campus supply unless new facilities are opened.

The strategic importance and architectural significance of North of Boulder Creek facilities is less of a driver than those on Main Campus. Replacement is therefore viewed as the preferred approach for these facilities given their condition along with floodplain issues that must be addressed. The neighborhood also provides opportunities to offer additional housing supply.

The financial challenges and affordability concerns with building all new housing to support a price sensitive population may necessitate that a portion of the housing stock remains in order to provide lower-cost options.

The need for a series of comprehensive renovations will result in short-term bed reductions as buildings come off-line and improvements add “outside-the-unit” space to meet national standards. However, CU Boulder’s desire for more housing options and unmet student demand to support it, requires a growth in the housing inventory at the outset of this Plan. While individual projects may reduce the supply, the bed

count will gradually rise over the course of the Plan. The addition of new housing supply on campus through swing space will build up capacity, diversify the inventory unit types, address significant deficiencies in ADA accessible units, and allow the system to stay at or above current supply levels throughout the course of the Plan.

## 5 FINANCIAL STRATEGY



B&D developed a system-wide housing financial model to understand current financial performance and test feasibility of housing improvements to support the Plan’s objectives. In order to isolate housing performance, B&D worked with CU Boulder to allocate revenue, expenses, and debt service that correspond with housing facilities and operations. Other non-housing components, Dining and Children’s Center in particular, that fall within the HDS Department were reallocated to project system-wide performance including debt coverage ratio. At this point, no changes to existing programs or offerings were assumed for the non-housing components outside of annual inflation increases. The major takeaways based on this financial analysis are outlined within this section and discussed in greater detail within the Recommendations section of this Plan.

### **The housing system’s reliance on Main Campus residence halls from a cash flow perspective will impact the renovation strategy.**

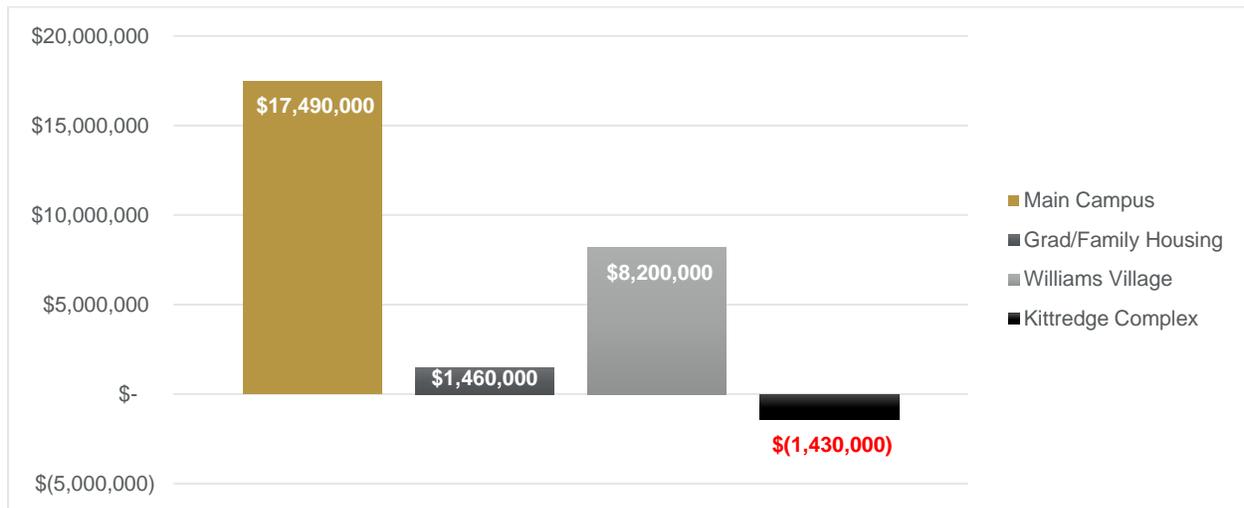
As previously stated, Main Campus residence halls will require significant investment in the coming years to address facility, infrastructure, and programmatic concerns. While this is not unexpected given the fact that these are older facilities with high-density living arrangements and limited debt service obligations, it poses a challenge for the implementation strategy. Over time the cash flow generation from these communities will diminish as they are taken offline to undergo renovation. They will also be incurring new debt service obligations. The overall impact will be that other communities must optimize their financial performance to support this changing dynamic.

**\$17M**

*in cash flow generation from the Main Campus residential neighborhood (FY19)*

Exhibit 43 shows the current cash flow after debt service for different residential neighborhoods. Assumptions were used to determine dining revenue per neighborhood according to meal plan participants.

**Exhibit 43.** System-Wide Performance by Neighborhood (FY19)



*\*Dining revenue allocated based on number of meal plan residents per neighborhood*

With a priority to renovate most of the Main Campus residence halls, the financial performance of these halls was a focal point for the analysis. Due to the scale of these halls, they are some of the largest positive financial contributors in the housing system. Therefore, taking these communities offline for renovation creates unique challenges for the housing system to maintain strong financial performance and necessary bed counts. The residence halls most in need of substantial renovations, five Farrand Field residence halls plus Sewall Hall, collectively generate approximately \$7 million in housing-only cash flow after debt service for the system based on FY19 revenue.

Given the financial impact of the residence halls targeted for renovation, phasing must be considered. By phasing renovations, CU Boulder will be able to incrementally absorb the financial impact, and create a sustainable long-term outlook for the housing system. Additionally, depending on CU Boulder housing’s ability to meet the targeted future financial performance, the University may elect to re-order the halls or change the speed in which renovations occur, which is possible by phasing.

CU Boulder must also be financially prudent when pursuing residence hall renovation projects. Only facilities that are 1) historically / architecturally significant, 2) of a large enough scale to support the financial investment, and 3) in alignment with institutional strategic objectives should be considered. If individual facilities cannot meet this criteria then repurposing may be a more appropriate option. Sewall Hall and the Engineering Quad buildings are examples of facilities that will require additional exploration as to the value of a significant renovation project. Given the relatively limited bed count, accessibility issues, and major deferred maintenance backlogs these facilities will not likely generate the revenue necessary to support a significant renovation. However, the buildings’ strategic importance to campus given the history and architecture could support an investment into the facility.

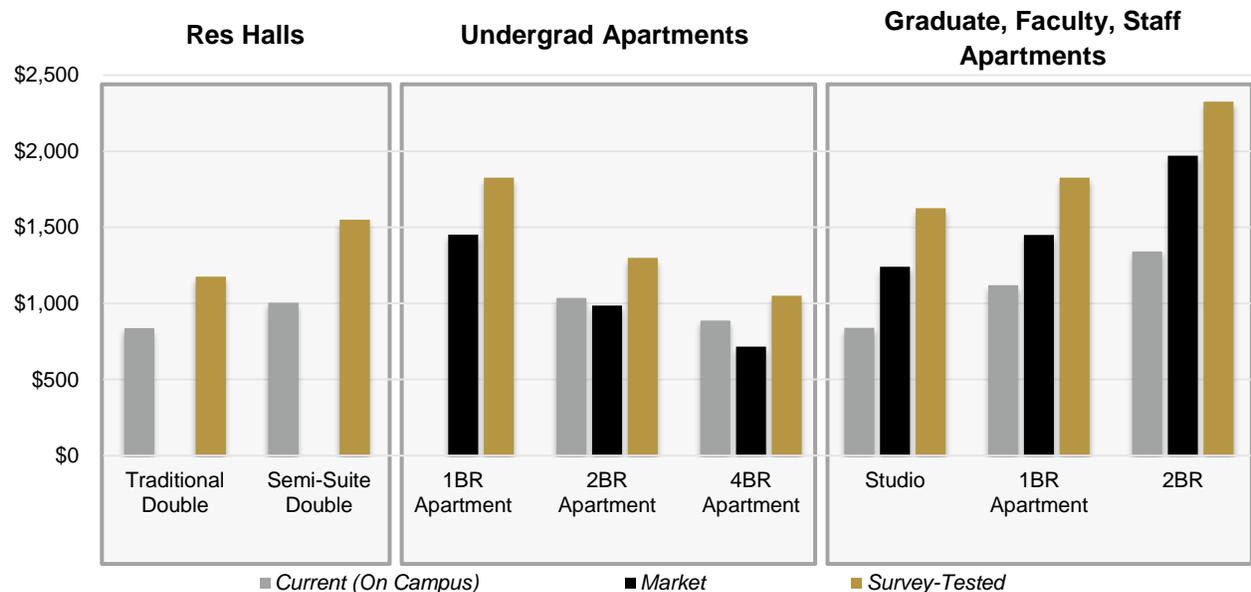
**A holistic financial strategy must support the system-wide implementation plan while balancing strategic objectives.**

As previously discussed, the existing rental structure does not support new construction on a standalone basis using current campus construction standards and operating costs. With the ultimate financial criteria of maintaining a system-wide 1.25 debt coverage ratio, new facilities will require premium pricing in order to lessen the negative burden on performance.

B&D’s financial analysis utilized a system-wide approach which means that the scale of current operations can support and even subsidize new & renovation projects. However, the level of investment required across the housing system to grow and improve the inventory will strain the financial performance over time. Considering this information, individual capital projects must come as close to supporting themselves as possible so as not to negatively impact required debt coverage ratios across the system.

One way to achieve this is through premium pricing for new and renovated housing options that are closer aligned to survey-tested rates. A premium of 15% - 25% over comparable on-campus units was assumed for the preliminary financial modeling to support this performance. Fortunately, the demand shows that interest in a higher-quality and premium-priced product exists among undergraduates. Challenges with this approach among the graduate student population, faculty, and staff were outlined previously in this Plan.

**Exhibit 44.** Current vs. Market vs. New Construction Rates



As noted earlier, a key objective of this Plan is to provide a balanced approach and housing product that supports students from different socio-economic backgrounds.

A system-wide rental rate strategy should support this goal. Various pricing tiers should be considered including offering additional price points associated with new / renovated units. This can be implemented in a manner that maintains a diversity of pricing levels within each building and neighborhood. Creating greater pricing differentiation will align with the diversity of living environments that will be offered across campus especially as much of the inventory is renovated or new construction following implementation of the Plan. In an effort to maintain affordability, consideration should be made to provide alternative meal plan options. These options could also limit impact to main campus dining facilities that are currently overburdened.

Beyond housing rental rates, other options must be considered that can be adjusted to support system financial performance through Plan implementation. Other options for consideration are outlined below:

#### **PROGRAM / PROJECT COST ADJUSTMENTS OR CAPITAL CONTRIBUTIONS**

The Project Team developed preliminary programs and capital budgets for each new construction or significant renovation project recommended. These were developed primarily to inform financial modelling and are meant as a starting point for discussion. Since the costs inform the new debt service obligations any opportunity to reduce the budgets will help the implementation strategy. This could entail multiple components including, but not limited to, the following:

- ◆ *Program reductions* – smaller facilities to reduce construction cost
- ◆ *Capital contributions* – upfront funding from internal or external sources to reduce borrowing amount
- ◆ *Project cost reductions* – alternative delivery methods

#### **OPERATING EXPENSE ADJUSTMENTS**

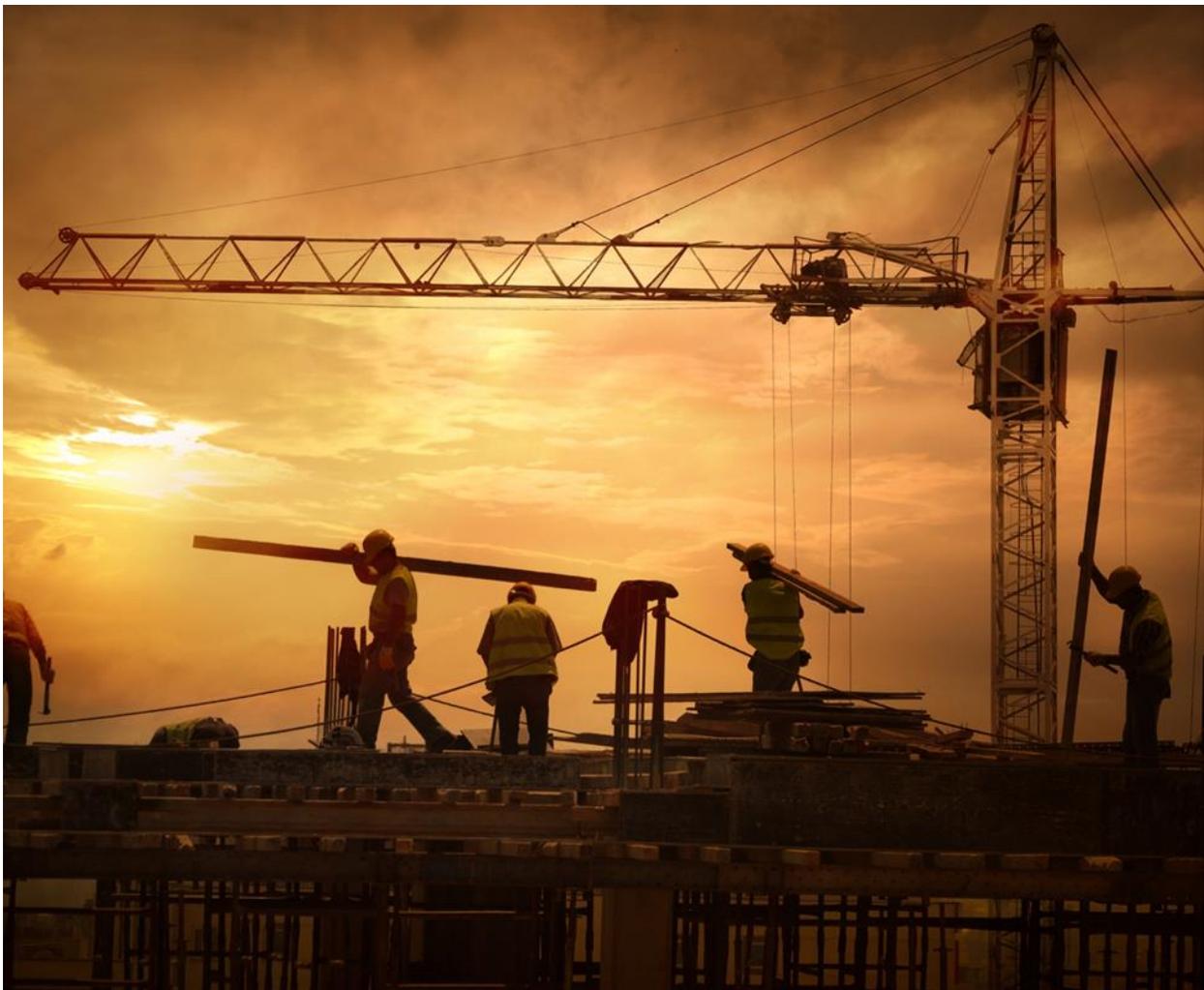
CU Boulder should also consider a comprehensive assessment of operating expenses across the system to identify efficiencies and potential cost savings. Based on an initial review of housing-only operating expenses and comparison to comparable institutions, B&D believes there could be opportunities for reductions. This would require further examination to clearly understand the individual cost items that may be higher than industry standards and identification of ways to save. Given the scale of CU Boulder's system, minor cost per square foot reductions could have a major impact and ultimately improve affordability for residents.

### ALTERNATIVE FINANCING

As a baseline assumption, the Project Team has assumed that nearly all proposed projects in this Plan will be university-financed and delivery through traditional methods. There are, however, individual projects that could profile well as potential public-private partnerships (“P3”). The Project Team believes there could be advantages to exploring P3’s further based on B&D’s involvement in similar projects. CU Boulder should consider projects that meet the following criteria:

- ◆ Financial performance as a standalone, university-financed project is challenged
- ◆ System financial performance does not rely on current facility (if a renovation or replacement)
- ◆ Opportunity for mixed-use development
- ◆ Scale necessary to attract private sector interest and support project economics
- ◆ Campus periphery location that could support multiple uses and new revenue streams

In the next section, individual projects will be outlined as possible P3’s and the impact on the overall implementation plan.



# 06

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## Recommendations

## Recommendations

Based on the key findings outlined in the previous sections, the Project Team developed planning scenarios that reflected a series of improvements to the housing system. Initially, two growth scenarios were refined based on feedback from the CU Boulder Project Committee. These two options provide a path forward for the university to achieve the strategic objectives while retaining flexibility to respond to market conditions and/or shifting university priorities. A third scenario “base case” scenario was developed as a baseline to consider the investment required to maintain the housing system at near current capacity. Each scenario reflects how collective actions would impact bed count, housing typology, and neighborhood development. The three scenarios were then compared to emphasize the differences in the level of growth, required investment, and financial feasibility.

### SCENARIO PLANNING

#### INITIAL DIRECTION

The Project Team recommends the University prioritize a series of housing improvements in the short-term to initiate the Plan. This introductory phase focuses on initial steps toward reinvestment in the existing inventory through improvements to core campus residence halls and growth North of Boulder Creek. The initial projects include two new construction projects at sites in the North of Boulder Creek area to grow the on-campus housing supply and three renovation projects to address deferred maintenance concerns.

Overall growth of the university housing inventory does occur due to the two new construction project North of Boulder Creek. At the end of this initial phase the total inventory would be increased by 690 beds. The specific projects that align with the bed count changes in the Initial Direction are shown below. Overall, this scenario includes a total of two new construction and three renovation projects within the first six years of the Plan. It is assumed the first two projects would occur North of Boulder Creek at Site A1 & Site B5 (site designations per the North of Boulder Creek Master Site Development Plan). Following the opening of the first two projects, the university can shift focus to renovations needed in Main Campus residence halls.

**Exhibit 45.** Proposed Initial Direction Projects

Initial Direction Phasing				
Project	Project Type	Year Open	# of Beds (Existing)	# of Beds (New Construction / Post Renovation)
NoBC (Site A1)	New Construction	Year 3	-	400
NoBC (Site B5)	New Construction	Year 3	-	350
Farrand Renovation	Extensive Renovation	Year 4	394	374
Cheyenne-Arapaho Renovation	Extensive Renovation	Year 5	419	398
Libby Renovation	Extensive Renovation	Year 6	404	384

The housing inventory at the conclusion of the Initial Direction projects will still be heavily composed of traditional-style residence hall beds but the growth in other unit types will offer more options for residents. The diversification of housing options is likely to be more limited in this phase but will depend on the renovation plans for the Main Campus halls.

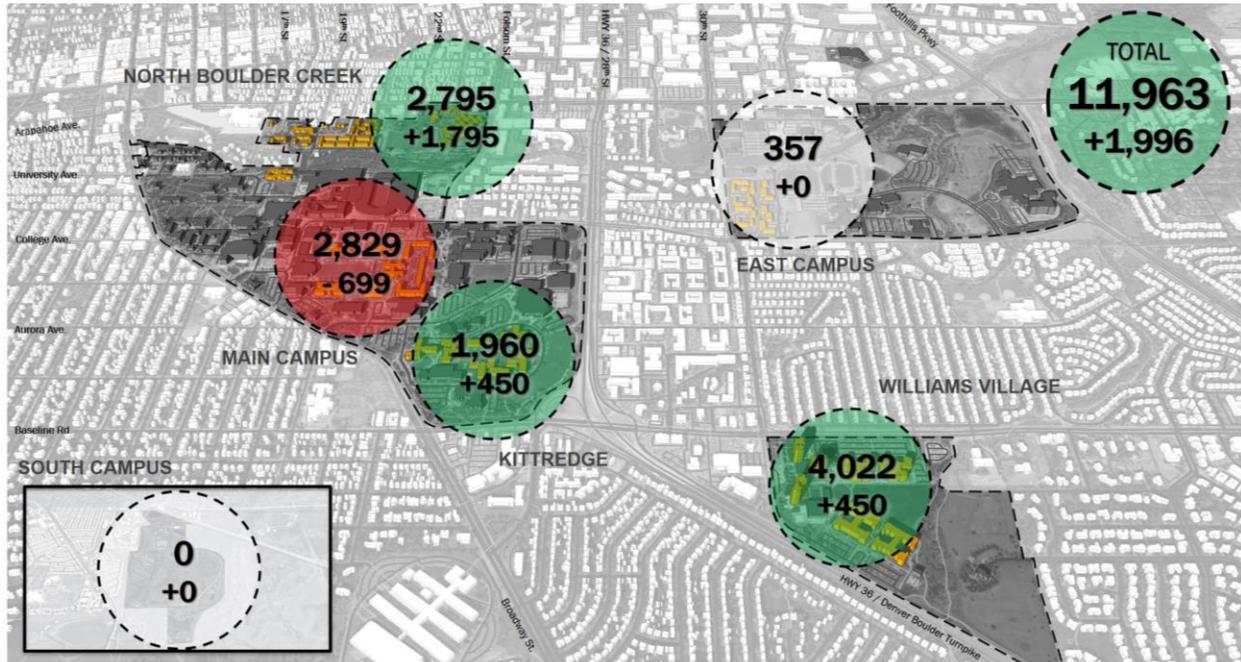
### Scenario A – Strengthen / Reinvest In Core Campus

The primary focus of Scenario A is strengthening the core campus residence halls with reinvestment in the current inventory by refreshing, renovating, and improving existing living environments. While a series of renovation projects occurs, the housing inventory would also grow. The majority of this added inventory would be located in the North of Boulder Creek, Kittredge Complex, and Williams Village areas as new sites are developed and existing communities are replaced with higher-density developments. A general summary of the neighborhood strategy for this scenario is outlined below.

- ◆ Main Campus: Refresh / Replace Inventory, Diversify Unit Mix, Reduce Supply
- ◆ Kittredge Complex: Diversify Unit Mix, Slight Supply Increase
- ◆ Williams Village: Diversify Unit Mix, Slight Supply Increase
- ◆ North of Boulder Creek: Phased Redevelopment, Increase Supply / Density
- ◆ East Campus: Long-Term Development Site (dependent on future campus plans)
- ◆ CU Boulder South Campus: Faculty, Staff, Upper-division / Graduate Student (For the purposes of this plan, South Campus was not included in future scenario options but discussed in Appendix G)

Overall growth of the university housing inventory is fairly gradual but includes the addition of approximately 2,000 new beds at the end of the implementation plan. Residential growth by the neighborhoods is shown in Exhibit 46.

**Exhibit 46.** Scenario A Bed Count Change by Neighborhood



The specific projects (in addition to the Initial Direction projects) that align with the bed count changes in Scenario A are shown in Exhibit 47. It is worth noting that despite the differences in the scenarios, the first five projects are identical for each scenario. This provides CU Boulder with the flexibility to move forward with implementation and make a future adjustment depending on the overall strategy for East Campus.

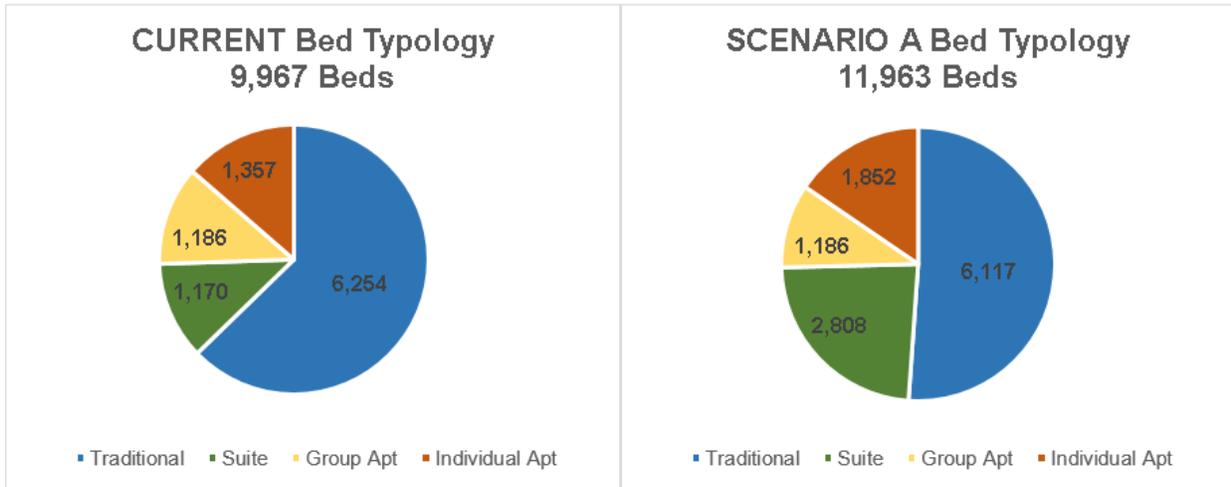
**Exhibit 47.** Proposed Scenario A Projects (after Initial Direction)

Scenario A Phasing				
Project	Project Type	Year Open	# of Beds (Existing)	# of Beds (New Construction / Post Renovation)
New Kittredge Res Hall	New Construction	Year 6	-	450
Faculty Court Replacement (Site A4)	New Construction	Year 6	35	400
Athens Court Replacement (Site B1 & B2)	New Construction	Year 7	116	550
Willard Renovation	Extensive Renovation	Year 7	471	447
Will Vill Res Hall	New Construction	Year 8	-	450
Sewall Renovation	Extensive Renovation	Year 9	330	314
Hallett Renovation	Extensive Renovation	Year 10	479	455
Newton Court Replacement	New Construction	Year 10	512	810

In addition to delivering much needed renovations and adding to the university housing inventory, the planning scenarios focused on diversifying the unit mix to reflect demand preferences and offer greater flexibility into the future. The housing inventory will still be heavily composed of traditional-style residence hall beds but the growth in other options will offer more options for residents. The growth in suites and

apartments will offer more attractive unit types for returning undergraduates, transfer students, graduate students, faculty, and staff desiring to live on campus.

**Exhibit 48.** Scenario A Inventory Unit Mix



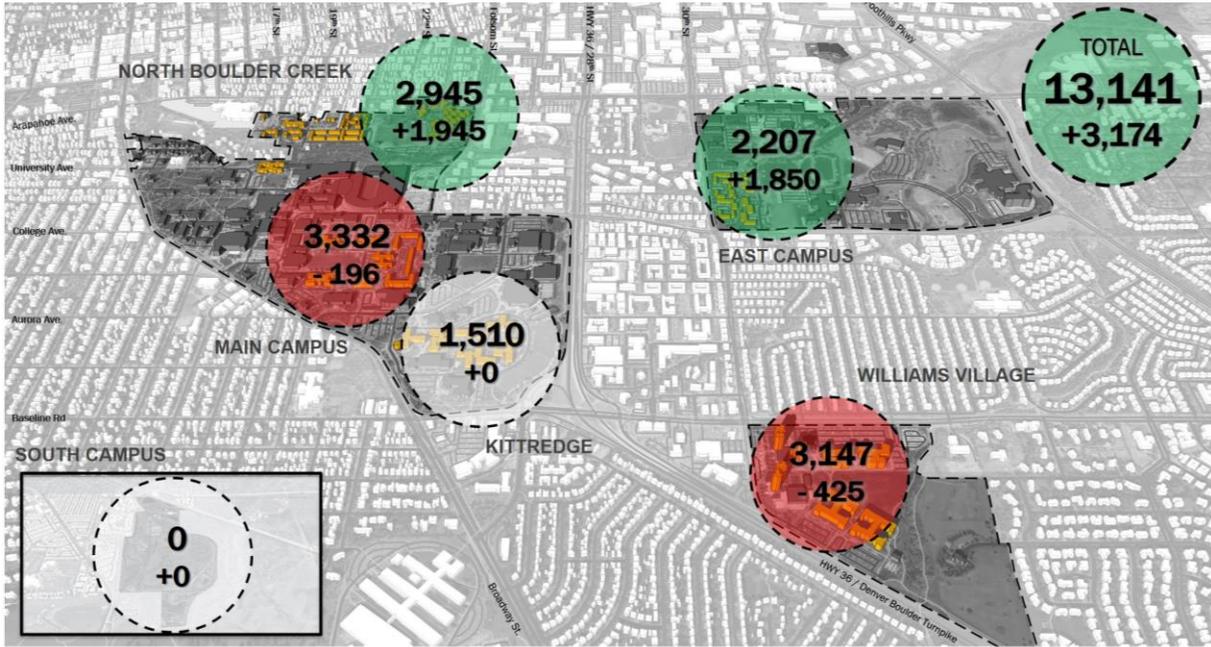
## SCENARIO B – HOUSING AS A CATALYST FOR EAST CAMPUS GROWTH

Scenario B focuses on many of the same objectives as Scenario A with improvements to core campus residence halls and growth at North of Boulder Creek. However, Scenario B proposes significant residential growth on East Campus. This scenario proposes utilizing expanded housing offerings as an avenue to develop East Campus into a vibrant, mixed-use campus. A general summary of the neighborhood strategy for this scenario is outlined below.

- ◆ Main Campus: Refresh / Replace Inventory, Diversify Unit Mix, Reduce Supply
- ◆ Kittredge Complex: Maintain Current Configuration
- ◆ Williams Village: Diversify Unit Mix
- ◆ North of Boulder Creek: Phased Redevelopment, Increase Supply / Density
- ◆ East Campus: Rapid Redevelopment, Diversify Unit Mix & Resident Population, New Residential Neighborhood Creation
- ◆ CU Boulder South Campus: Faculty, Staff, Upper-division / Graduate Student (For the purposes of this plan, South Campus was not included in future scenario options but is discussed in Appendix G)

In addition to an expansion of housing on East Campus, this scenario proposes a more aggressive housing growth strategy. At the end of this implementation plan, the Project Team assumes over 3,000 additional on-campus beds.

**Exhibit 49.** Scenario B Bed Count Change by Neighborhood



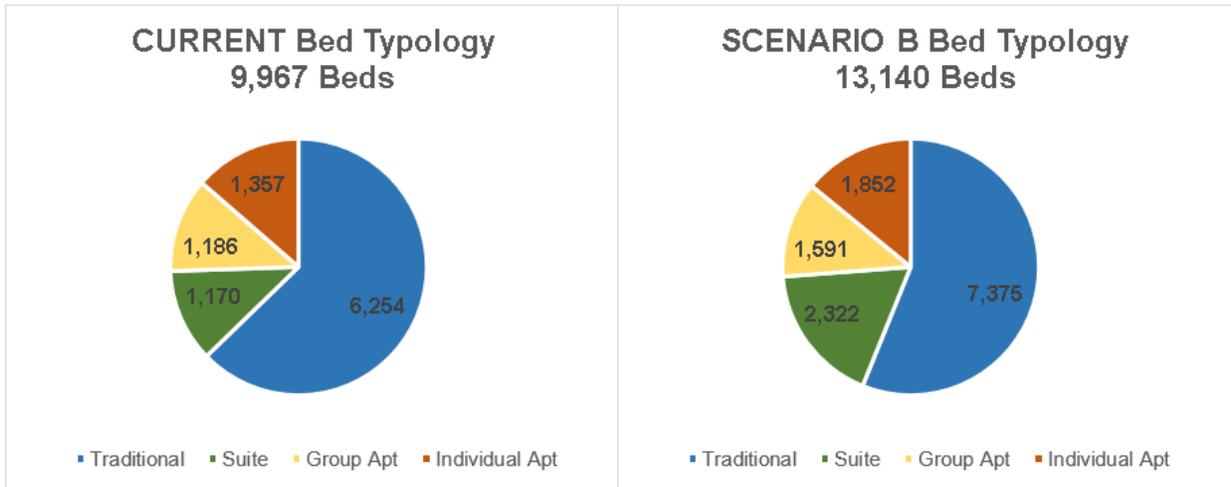
The specific projects aligning with the bed count changes in Scenario B are shown below. Given that this scenario is more aggressive in the housing growth strategy it includes more capital projects than Scenario A. Overall, this scenario includes a total of nine new construction and two renovation projects by Year 12.

**Exhibit 50.** Proposed Scenario B Projects (after Initial Direction)

Scenario B Phasing				
Project	Project Type	Year Open	# of Beds (Existing)	# of Beds (New Construction / Post Renovation)
Engineering Quad Replacement #1	New Construction	Year 6	344	400
East Campus Res Hall #1	New Construction	Year 7	-	450
East Campus Res Hall #2	New Construction	Year 7	-	450
East Campus Apartments	New Construction	Year 8	-	500
Engineering Quad Replacement #2	New Construction	Year 8	231	400
East Campus Res Hall #3	New Construction	Year 9	-	450
Willard Renovation	Extensive Renovation	Year 10	471	447
Faculty Court Replacement (Site A4)	New Construction	Year 10	35	550
Athens Court Replacement (Site B1 & B2)	New Construction	Year 10	116	550
Hallett Renovation	Extensive Renovation	Year 11	479	455
Newton Court Replacement	New Construction	Year 12	512	810

As shown in Exhibit 51 below, Scenario B will more significantly grow the apartment inventory while still retaining a large proportion of traditional-style units. This is largely due to the creation of a new first-year residential community on East Campus in this scenario.

**Exhibit 51.** Scenario B Inventory Unit Mix



## BASE CASE

In addition to Scenarios A and B, a Base Case scenario was analyzed. The focus of this scenario was to create an option of simply maintaining the existing housing inventory with the minimum level of improvements. Though this scenario does not include any programmatic improvements a series of renovation projects would still be required to keep existing facilities operational.

The specific projects aligning with the bed count changes in Base Case are shown below. Given that this scenario is a baseline to maintain current facilities, the housing strategy focuses primarily on renovation projects with seven renovated buildings by Year 9. The two new construction projects are replacement housing for Faculty Court and Athens Court. Given that both were built in the 1950s and have some of the worst FPI and FCI condition scores, the Project Team does not believe a renovation is justified.

**Exhibit 52.** Proposed Base Case Projects

Base Case Phasing				
Project	Project Type	Year Open	# of Beds (Existing)	# of Beds (New Construction / Post Renovation)
Farrand Renovation	Moderate Renovation	Year 4	394	355
Faculty Court Replacement (Site A4)	New Construction	Year 5	35	400
Cheyenne-Arapaho Renovation	Moderate Renovation	Year 5	419	377
Libby Renovation	Moderate Renovation	Year 6	404	364
Athens Court Replacement (Site B1 & B2)	New Construction	Year 7	116	550
Willard Renovation	Moderate Renovation	Year 7	471	424
Sewall Renovation	Extensive Renovation	Year 8	330	297
Hallett Renovation	Moderate Renovation	Year 9	479	431
Newton Court Renovation	Low Renovation	Year 9	512	512

## FINANCIAL PERFORMANCE

Based upon the planning scenarios, the Project Team modeled financial performance to project the feasibility of implementing the Plan.

CU Boulder and the Project Team developed overarching financial principles to be followed when developing the program, capital budgets, pro forma, and rental rate strategy. These principles, as highlighted within the Strategic Framework, are as follows:

1. Maintain financial self-sustainability of the system as modernization occurs, defined as a 1.25 debt service coverage ratio;
2. Balance pricing that promotes equity amongst residents in order to maintain a high-quality of operations and maintenance;
3. Promote accessibility by ensuring housing options allow CU Boulder to continue to provide a range of price points.

### Capital Budgets

To evaluate the potential major investments to the university housing system, the Project Team worked with CU Boulder administrators to develop preliminary capital budgets for each major project. The budgets accounted for project year opening, number of beds, hard costs, and soft costs. Hard costs include the building structure, site development, and demolition & abatement. Soft costs include fees for Architectural & Engineering, Construction Management, Project Management, as well as costs for Project Contingency, Furniture, Fixtures & Equipment, and Testing, Surveys & Permits. All budgeted costs were adjusted for inflation (5% annually) to the anticipated opening year of the individual projects. It is important to note that

these preliminary budgets include the cost for constructing housing space only. New development will require additional mixed use and campus life facilities to support the community that are not included in this modeling.

The anticipated full development costs for the Initial Direction projects are approximately \$350 million. However, the university anticipates funding only site development & design fees for the Libby renovation in the Initial Direction which reduces the funding amount to \$290 million.

**Exhibit 53. Initial Direction Capital Budgets**

Initial Direction			
Project	Project Type	Year Open	Preliminary Budget*
NoBC (Site A1)	New Construction	Year 3	\$76,777,000
NoBC (Site B5)	New Construction	Year 3	\$66,920,000
Farrand Renovation	Extensive Renovation	Year 4	\$75,380,000
Cheyenne-Arapaho Renovation	Extensive Renovation	Year 5	\$65,565,000
Libby Renovation	Extensive Renovation	Year 6	\$68,296,000
<b>TOTAL</b>			<b>\$352,393,000</b>

\*Hard + Soft Costs. Inflated to mid-point of construction.

Exhibit 54 provides a summary of the preliminary capital budgets associated with Scenario A. Based on these preliminary assumptions, the total cost for Scenario A, including the cost of the Initial Direction projects, is projected between \$1.2 billion - \$1.3 billion dollars.

**Exhibit 54. Scenario A Capital Budgets**

Scenario A			
Project	Project Type	Year Open	Preliminary Budget*
New Kittredge Res Hall	New Construction	Year 6	\$97,507,000
Faculty Court Replacement (Site A4)	New Construction	Year 6	\$97,854,000
Athens Court Replacement (Site B1 & B2)	New Construction	Year 7	\$143,887,000
Willard Renovation	Extensive Renovation	Year 7	\$60,465,000
Will Vill Res Hall	New Construction	Year 8	\$108,575,000
Sewall Renovation	Extensive Renovation	Year 9	\$70,578,000
Hallett Renovation	Extensive Renovation	Year 10	\$72,434,000
Newton Court Replacement	New Construction	Year 10	\$252,333,000
<b>TOTAL</b>			<b>\$904,207,000</b>
<b>TOTAL (including Initial Direction)</b>			<b>\$1,256,600,000</b>

\*Hard + Soft Costs. Inflated to mid-point of construction.

Given the amount of new construction for Scenario B, the preliminary costs associated with these projects are approximately \$450 million to \$500 million dollars greater than Scenario A.

**Exhibit 55. Scenario B Capital Budgets**

<b>Scenario B</b>			
<b>Project</b>	<b>Project Type</b>	<b>Year Open</b>	<b>Preliminary Budget*</b>
Engineering Quad Replacement #1	New Construction	Year 6	\$84,817,000
East Campus Res Hall #1	New Construction	Year 7	\$102,972,000
East Campus Res Hall #2	New Construction	Year 7	\$102,972,000
East Campus Apartments	New Construction	Year 8	\$122,265,000
Engineering Quad Replacement #2	New Construction	Year 8	\$91,334,000
East Campus Res Hall #3	New Construction	Year 9	\$107,369,000
Willard Renovation	Extensive Renovation	Year 10	\$69,686,000
Faculty Court Replacement (Site A4)	New Construction	Year 10	\$161,117,000
Athens Court Replacement (Site B1 & B2)	New Construction	Year 10	\$166,203,000
Hallett Renovation	Extensive Renovation	Year 11	\$75,955,000
Newton Court Replacement	New Construction	Year 12	\$277,848,000
<b>TOTAL</b>			<b>\$1,363,107,000</b>
<b>TOTAL (including Initial Direction)</b>			<b>\$1,715,500,000</b>

\*Hard + Soft Costs. Inflated to mid-point of construction.

The projects deemed necessary to address significant facility issues and keep existing building operational in the Base Case scenario are identified in Exhibit 56. The total of these preliminary capital budgets is approximately \$620M. Though this option requires less investment than Scenario A or Scenario B, it provides limited benefit to the institution as it only addresses infrastructure needs and deferred maintenance issues at the existing facilities. The Base Case does not increase housing supply, diversify living options, modernize the inventory, nor improve affordability.

**Exhibit 56. Base Case Capital Budgets**

<b>Base Case</b>			
<b>Project</b>	<b>Project Type</b>	<b>Year Open</b>	<b>Preliminary Budget*</b>
Farrand Renovation	Moderate Renovation	Year 4	\$51,791,000
Faculty Court Replacement (Site A4)	New Construction	Year 5	\$92,274,000
Cheyenne-Arapaho Renovation	Moderate Renovation	Year 5	\$45,205,000
Libby Renovation	Moderate Renovation	Year 6	\$46,906,000
Athens Court Replacement (Site B1 & B2)	New Construction	Year 7	\$143,887,000
Willard Renovation	Moderate Renovation	Year 7	\$41,939,000
Sewall Renovation	Extensive Renovation	Year 8	\$67,283,000
Hallett Renovation	Moderate Renovation	Year 9	\$49,860,000
Newton Court Renovation	Low Renovation	Year 9	\$83,513,000
<b>TOTAL</b>			<b>\$623,700,000</b>

\*Hard + Soft Costs. Inflated to mid-point of construction.

## Operating Pro Forma

B&D utilized CU Boulder’s fiscal year (FY) 2019 and 2020 actuals in order to develop a system-wide financial pro forma that incorporated each capital project for the respective scenarios. The goal was to understand financial feasibility as implementation occurs and adherence to the financial objectives stated earlier. The baseline assumptions to inform this modelling were as follows:

1. Housing-only revenues and expenses were isolated with CU Boulder assistance. Expenses were distributed to individual facilities on a per square foot basis.
2. Operating expenses and revenues associated with non-housing components, dining and the Children’s Center, were based on FY 2019 numbers and inflated 3% annually.
3. Housing performance was isolated with the following baseline assumptions:
  - a. Annual revenue and expense increases do not exceed 3%
  - b. New and renovated options do not exceed a 20% premium over the existing comparable unit types
4. Financing assumptions (new and renovation projects) as follows:
  - a. 100% debt-financed
  - b. 30 year term with a 4.5% interest rate
  - c. 3% - 5% capital contributions for each project funded from HDS reserve balance
5. As a result of the uncertainty related to impacts from the COVID-19 pandemic, FY 2021 is assumed to be a breakeven year for the Housing and Dining System. Additionally, there is no annual reserve contribution.
6. FY2022 financials are based on pre-COVID-19 levels of operation.

Utilizing the assumptions outlined above and incorporating all capital projects according to the phasing plan, B&D analyzed the individual financial performance of each Scenario. Based on the annual debt coverage ratios, inclusive of reserve balances, each Scenario is financially viable. Both Scenarios A & B are able to maintain a debt coverage ratio over the required 1.25 level despite taking on the series of new construction and renovation projects (Exhibit 57). Please note that Year 1 reflects the budgetary challenges created by COVID-19.

**Exhibit 57. Debt Coverage Ratios per Scenario**

YEAR	1	2	3	4	5	6	7	8	9	10	11	12
<b>Scenario A</b>	3.40	4.82	5.29	4.23	3.44	3.09	2.24	1.92	1.70	1.45	1.28	1.30
<b>Scenario B</b>	3.40	4.82	5.30	4.25	3.37	2.97	2.61	2.15	1.85	1.44	1.28	1.33

While adjustments are likely to occur to projects proposed for later years in the Plan, the Initial Direction is a clear first step to improving the housing system and is able to maintain a healthy debt coverage ratio well above the 1.25 level.

Also worth noting is that the decision was made to assume the Newton Court replacement project would be delivered through a public-private partnership (“P3”) as a part of the financial analysis. Not only does this project represent an ideal candidate for P3 delivery but this adjustment helps the financial performance of each Scenario. B&D believes this project is an ideal candidate for P3 exploration given the following reasons:

- Significant project scale to support financial feasibility, maintain affordability, and generate private sector interest;
- Campus-edge location provides opportunity to reduce balance sheet impact;
- Offers potential for alternative revenue streams through a mixed-use development; and
- An expedited P3 delivery could help minimize construction cost escalation.

While additional projects could be evaluated as P3 projects in the future, Newton Court appears the most favorable given CU Boulder’s objectives.

## Scenario Comparison

To help further understand the differences between the scenarios, Exhibit 58 compares each along with how they align with key strategic drivers outlined at the outset of this Plan.

**Exhibit 58.** Scenario Alignment with Strategic Drivers

<b>01</b> SHORT-TERM IMPROVEMENTS (0 – 5 Years)	<b>INITIAL DIRECTION:</b>	
<i>New Construction Projects</i>	2	
<i>Renovation Projects</i>	3	
<i>Level of Investment*</i> 	<b>\$290M</b>	
		
<b>02</b> LONG-TERM STRATEGY (5 – 15 Years)	<b>SCENARIO A:</b> <i>Strengthen Core Campus</i>	<b>SCENARIO B:</b> <i>East Campus Growth</i>
<i>Housing Growth</i> <small># of additional beds</small>	+2,000 beds	+3,200 beds
<i>Diversification of Housing Options</i> <small>Additional non-first-time freshman beds</small>	2,600	3,100
<i>Modernization of Inventory</i> <small>% of inventory replaced or significantly renovated</small>	47%	53%
<i>Student Affordability**</i> <small>Annual Increases / New Project Premium</small>	3% / 20%	3% / 20%
<i>Level of Investment</i>  <small>Inclusive of Initial Direction Costs</small>	<b>\$1.25B</b>	<b>\$1.7B</b>

\*Includes only site development / design costs for third renovation project (Libby Hall)

\*\*Rates are for housing only. Lower board increases would allow for a blended 3% overall increase.

In summary, Scenario B expands residential offerings on East Campus and grows inventory more rapidly than Scenario A while still prioritizing renovations of existing assets. However, these changes come at a higher level of investment for the University with a total cost of approximately \$1.7B compared to \$1.25B for Scenario A. Both Scenarios provide significant long-term benefits to the institution and offer the necessary investment to grow, modernize, and diversify the existing inventory. Importantly, they are also

financially feasible in terms of debt coverage ratio and other financial parameters established as a part of this Plan.

The Initial Direction phase offers a solid balance of implementing the priority housing improvements while maintaining financial sustainability and offering flexibility to adjust as changes occur. These initial projects will provide the university with a clear pathway to long-term success of the housing system.

## Policy Considerations

As part of the Plan, the Project Team evaluated qualitative and quantitative information regarding policies for the University's housing system. To enhance the student life experience based on student and stakeholder feedback, the following are major themes and suggestions that should warrant further consideration concurrent with developing the appropriate financial strategy and implementation plan.

### General Housing

To move closer to CU Boulder's strategic goal of housing additional non-freshmen students on campus, the Project Team suggests the following policy considerations:

- Create incentives for returning students. For example, ability to choose room assignment prior to other students.
- Develop differing rules, regulations, and programming for residential communities depending on the targeted cohort population (i.e., first-year residence halls should have different policies than upper-division or graduate student apartments). This will allow for the graduated independence desired by non-freshman residents, similar to the offerings available in the off-campus market.

### Residential Academic Programs (RAPs)

The RAPs at CU Boulder are popular elective programs in which students live together in a residence hall, share common academic interests, participate in specially tailored small first-year classes, have unique access to faculty, and engage in co-curricular activities that reinforce the program's academic theme. Following student and stakeholder feedback from campus visits and student survey data the Project Team offers the following considerations related to RAPs:

- Create RAP programs that include post first-year students. The Kittredge Complex may be a good location to support this type of program given its location, popular facilities, and successful RAPs.
- Develop standard policies and approaches for all RAP programs to ensure the quality of residential experience and address inconsistencies.
- Allow students from other halls to participate in RAP programs.
- Expand classroom locations for RAP programs.
- Mix halls with no RAP programs to encourage program sharing.

### Parking / Transportation

In the online surveys and Open House events parking on campus was indicated by students, faculty and staff as an issue (lack of available spaces in convenient locations, expensive passes, etc.) at CU Boulder, as well as an important decision making factor when deciding on housing. The Project Team suggests CU Boulder consider the following for parking:

- Parking allowances and requirements for different demographics.
- CU Boulder is concurrently developing a Transportation Master Plan and the Project Team recommends the transportation plan address any parking issues related to on-campus housing.

### Dining

A meal plan is required for all CU Boulder students living in the residence halls. Currently dining comprises approximately 45% of room & board costs at the university. This percentage is high compared to what the Project Team typically observes at universities similar to CU Boulder. The Project Team suggests exploration of dining plan alternatives to help make living on campus more affordable and reduce the overall cost of attending CU Boulder.

### Pet Policy

Currently the CU Boulder pet policy states “No pets may be brought into the residence halls. Only non-dangerous aquatic life (fish and small turtles) that live fully submerged in water are permitted in an aquarium no larger than 10 gallons.” Only service and assistance animals are allowed on campus.

However, many of today’s students come from homes with pets and wish to have pets while attending college. In both the student and faculty / staff survey a desire for pet-friendly housing was indicated. A pet-friendly environment was the second most important physical feature among both faculty and staff who currently rent. Pet-friendly housing was also a theme during the Open House events on campus.

While this obviously could create operational and maintenance challenges, CU Boulder may want to consider designating an individual community as pet-friendly as a trial period. This would likely be most appropriate for an older facility and apartments, making a community North of Boulder Creek a reasonable option.

## **Accessibility and Inclusion**

### **Overview**

Information and data for both apartment housing and residence halls was provided regarding the overall condition and distribution of spaces. General observations were made during specific building and site tours regarding overall compliance. Specific reviews of all conditions were not a part of this scope of this Plan and specific compliance documents were not available for all buildings and instances thus this narrative will serve as a general summary and approach regarding compliance for all existing buildings, future renovated projects and future new builds.

CU Boulder’s Institutional Equity and Compliance Group formed a Housing Committee to audit the existing housing facilities and provide recommendations for the Plan. Their results and recommendations are included for reference within this narrative.

### **Audit and Analysis**

The CU Boulder Housing Committee reviewed the physical accessibility of all housing facilities in order to determine compliance with:

- Architectural Standards
- Program Accessibility Standards per 2010 Standards
- Section 504 “Comparable, Convenient and Accessible” Housing Standards

#### *Campus*

Initial review of compliance with regards to providing the required number of physically accessible units required will not be compliant on a “per site” basis. Rather, CU Boulder will review on a campus-wide basis to ensure that the required number of units are provided within the overall campus inventory. This will be the approach for existing buildings and inventory as a starting point for meeting the accessibility expectations. Extensive renovations of existing housing buildings and new housing projects will identify and provide the required number of physically accessible units for their site and may also choose to exceed the required number if it assists in the overall campus requirement.

#### *Residence Hall*

The Housing Committee determined that there was a compliance issue regarding the amount of physically accessible units on a “per site” basis but noted that certain units can be converted with minor structural changes to make them fully compliant in order to provide sufficient coverage in single and double suites throughout the campus inventory. This conversion would be required to bring the campus into compliance until future renovations and projects can be completed. Williams Village North and East are halls constructed to 2010 standards that are targets to provide these accessible units for campus compliance.

Most residential buildings located in the Main Campus neighborhood remain inaccessible due to lack of ramps and appropriately sized elevators providing access to all portions of the building. Renovations to these buildings must include provisions to create inclusive buildings providing physical accessibility to all required areas of the building while still retaining the aesthetics of each facility.

#### *Apartments*

Most existing apartment units, with the exception of Bear Creek Apartments, were constructed before the 1980’s and have not been renovated to meet current or past accessibility standards. Per the review, only one accessible apartment exists in these sites and the overall buildings remain inaccessible.

Bear Creek Apartments has accommodations but does not meet ADA requirements. Only one-bedroom units are currently accessible falling short of providing adequate diversity and representation of unit types. An audit of Bear Creek apartments and public spaces can be completed to determine its compliance and ability to convert additional units to assist in the overall campus compliance.

New apartment buildings constructed will be required to meet current accessibility standards and should consider providing additional units to assist with the overall campus compliance goal stated previously.

### **Recommendations**

- Review existing residence hall inventory and convert rooms to provide the required number of accessible units campus wide.
- Perform an analysis of existing renovation halls to identify items that are barriers to accessibility. Buildings that are not targeted for renovation or removal should develop plans to address these items and provide full compliance where achievable. Buildings that are targeted for renovation or removal can be assessed and instances reviewed to determine if compliance is warranted until the renovation or removal takes place.
- Apply the current standards to future residential hall and apartment renovations.
- Apply the current standards to future residential hall and apartment projects.
- Provide excess accessible units in future renovations and new builds to assist with overall campus inventory and swing space needs.
- Audit Bear Creek for its compliance shortcomings and modify various bedroom units to increase diversity of unit types.
- Create a framework for this plan which will:
  - Identify compliance issues noted above.
  - Identify descriptions and methods required to make the elements accessible or eliminate the obstacles.
  - Develop a schedule for implementation for items approved.
  - Assign responsibility and budget for items approved.
  - Develop tracking and documentation for evidence of compliance after implementation.



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