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Objectives of the HDS Master Plan and Focus on Main Campus

Colorado State University has set a goal of adding 5000 new students aligned with the University strategic plan. In order to house the additional first year students in University owned housing on the main campus the residence halls will need to be expanded by 1400 beds. The plan for this expansion must be flexible to accommodate fluctuations in enrollment, volatility in the construction market and variations in available funding. This master plan looked at building and site design character as well as the maximum density acceptable on the main campus sites within the Housing and Dining portfolio on the main campus. The Aggie Villages sites south of main campus were also considered. The capacity exceeds the projected need, this study suggests that these sites can accommodate 1995 new beds on the main campus sites and an additional 852 beds on the Aggie Village sites for a total of 2847 total new beds.

The master plan embodies other objectives of Housing and Dining Services including supporting the academic mission of the University, recruiting and retaining students, and helping to build strong community ties among the students.

Implementation Constraints

The time frame of the master plan was established at five to fifteen years to accommodate developing a financial model. However, the plan has flexibility both in timing and sequence so that HDS can respond to changing enrollments and market conditions. A critical component to adding new beds is to develop additional bed capacity beyond current needs to create swing space to house students as old halls are torn down. The master plan addresses the financial constraints that affect the construction of new housing: Since the projects are financed by revenues from student rents and dining revenue the construction cost must reflect the financial impact on students. Student rents should be set with the intent to keep CSU education affordable and to reflect the private rental market in Fort Collins.

Priorities

There are several priorities that drive the master plan’s scope and sequence of work. The priorities overlap and multiple issues drive the sequencing in the same direction.

- Housing and Dining Services should be prepared to support the University’s stretch goals
- Replace the residence halls that are in the worst condition first; Newsom and Allison
- Build on the success of the Academic Village – extend the planning and programmatic strategies on to the adjacent Newsom site and further to the Aylesworth site
- Consolidation of dining operations to fewer, larger, more efficient dining halls
**Anticipated Cost Modeling and Financial Analysis**

**Summary**

Anderson Strickler, LLC prepared a financial model for the work represented in this master Plan. A summary of the financial plan is included in Section 7 of this report, the complete and detailed financial report is bound separately from this document. From the summary:

The financing plan for improvements to the Housing and Dining Services facilities at Colorado State University assumes that revenues, expenses, and debt service are consolidated system-wide. No one project must be self-supporting; rather, the system as a whole must be financially self-supporting. The plan serves as a framework for the annual planning of operations and capital projects. As such, sufficient latitude and flexibility exist for achieving overall revenue and operating expense targets necessary to generate cash flow to service new debt.

While flexible, the plan should be updated periodically to evaluate changing conditions and to incorporate actual operating and capital results. Finally, to see the plan through to completion, a culture of fiscal discipline will be required to maintain a balance between market sensitive income streams and the challenge to control operating and capital expense budgets.
Aspirations
This master plan is based on the idea that Housing and Dining can support the academic mission of Colorado State University beyond providing food and shelter to students. Residence life and dining services should provide students with the sense that they are part of the larger institution and that learning in the classroom is supported by peer interaction and living/learning programs in the residence and dining halls.

Architectural Building Character – Material Qualities
The new Academic Village has set an acceptable standard for new housing and dining projects. The projects there have been successful at meeting the goals of Housing & Dining Services as well as being very popular with students. These successes make the Academic Village a valuable recruitment and retention tool.

Section 8 of this report summarizes the programming study that was completed for the Academic Village and the University’s Aesthetic Guidelines. These two documents provide a wealth of information about the architectural character that new projects will continue to develop on campus.

Campus Planning Priorities
• Preserve the future potential for the City’s Mason Transit Corridor alternative transportation project.
• Reserve appropriate locations for associated facilities, and develop strong inter-modal linkages to the campus transit station, bike and pedestrian networks, and parking facilities.
• Building location and massing should contribute to the creation of pleasant and usable outdoor spaces.
• Complement the prevalent architectural styles within the historical phases of campus development. Sloped roofs and gable roof forms now prevalent on the south side of campus will lend themselves to continuity here. On the north side however, the existing international style with its inherent horizontality and flat roof profiles should be carefully considered during future development.
• Utilize consistent materials and color palettes in each zone to improve building aesthetics and create a more consistent identity for each zone.
• Increase site densities within the Academic Core through infill development where feasible.
• Conform to appropriate building preservation guidelines when renovating historically significant to facilities that are important to the University and surrounding community.

Site Design and Landscape Architecture
The master plan is based on the strategy of increasing density on the ground while staying in the three to five story range of building height. This strategy has been successful in the new residence and dining halls at the Academic Village at creating successful outdoor spaces and a manageable sense of scale. New development should shape vibrant outdoor public plazas where large numbers of students move through and congregate as well as smaller scale courtyards focused on the residents of a single hall. The buildings should have a street front presence that reinforces an urban edge of landscape, sidewalk and building wall.

• Continue to strengthen the landscape structure and outdoor spatial organization of the University to make the campus more orderly and attractive.
• Develop sustainable planting concepts for the campus that reinforce the urban context and open space system.
• Use consistent landscape materials to establish unity throughout the campus environment.
• Preserve existing, and create new, destination landscapes that invoke a positive image of CSU.
• Existing destination landscapes include the Oval, courtyards, quads, and special purpose spaces.
• Opportunities for new destination spaces will be available as new buildings are constructed.
• Give special consideration to appropriate landscape images at the edges of the campus. Edges should be densely planted where screening is desirable. Develop landscape solutions at campus entrances to strengthen the University identity and sense of arrival.
• Use shade tree plantings along vehicular, bicycle and pedestrian corridors to provide spatial orientation and physical comfort.
• Where existing turf areas do not provide opportunity for active or passive use, replace with ground plantings that require less water consumption per the expanses of hard, paved surfaces and to reduce the disruptive visual impact that autos have on the campus environment.
• Use landscape solutions to improve the physical and visual connections between Central, East, and South Campuses.
• Generally, views into campus should be broad, open and unobstructed. Where views are narrow and defined carefully consider framed vistas.
• Provide additional amenities to beautify and improve the function of the campus. Include additional large formal multi-use spaces, smaller informal places, paths, landmarks, public art and site furnishings to achieve the aspirered environment.
• Use tree plantings in mass to temper local heat gain. Consider microclimate issues carefully.
BACKGROUND AND SITE ANALYSIS

Existing Housing Inventory Evaluation

The housing portfolio at CSU spans a broad range of styles, unit types and condition. Many of the older residence halls follow a pattern of two residential wings bracketing a central dining facility.

Newsom and Allison Halls are in the worst shape and have the most pressing need to be replaced.

Ingersoll, Edwards, Braiden, Parmalee and Corbett are in reasonably good shape and some improvements have been made recently. These halls can continue to function through the duration of the master plan.

The Durrell Towers are functioning reasonably well. They will be maintained through the master plan period.

In analysis of the existing buildings, the planning team considered repair, replacement and renovation in increasing order of cost. The plan is based on maintaining those buildings which are functioning well and replacing those which are in poor shape. Major renovation projects are costly and would deliver less than optimum housing options, so that strategy is not employed in the plan.

It is important to note that even though not addressed specifically in this plan, renovations and revitalization of existing facilities, especially those in reasonably good shape, will occur over the years. These renovations may be concurrent or independent in regards to the time associated the plan. Expenditures in these areas are anticipated from carry-over maintenance and reserve funds and should be carefully monitored against the financial analysis developed as part of this plan.

Campus Growth Needs

The University has developed an ambitious agenda for expansion and improvements over the next five to fifteen years. These include research, teaching and service components and include an expansion of undergraduate enrollment to 30,000 students. A minimum of 1400 new beds are needed to accommodate this target growth to house additional first year students and capacity for a percentage of upper division undergraduates. In recent years enrollment has increased 100-200 students per year. The University must maintain flexibility in the master plan and housing portfolio to accommodate unexpected fluctuations in enrollments. This master plan identified well in excess of 1440 beds of development capacity which will provide the University with an additional level of flexibility to accommodate growth.
Context Diagram

Colorado State University is located in the center of the City of Fort Collins. Main access to the campus is from the east via car traffic along Mulberry and Prospect Streets and Harmony Road each of which provides access to Highway I-25 between Denver and Cheyenne. The neighborhoods to the west provide off-campus student housing both University-owned and private. The Mason Corridor is a proposed right-of-way that passes through the eastern edge of campus and will connect Fort Collins Old Town center to the north with campus and other retail areas to the south.
By color coding all campus buildings by function the different districts on campus are clearly highlighted. The two housing districts flanking the central Great Green form the basic diagram of the western side of main campus.
Traffic Pattern Diagram

The campus is organized by the basic Fort Collins street grid. The streets that continue through campus provide the circulation backbone for vehicles as well as several significant pedestrian routes. Parking is slowly shifting from a model of small, dispersed surface lots to fewer, large parking structures and surface lots located towards the edges of campus.

The academic spine highlighted in yellow is the major organizing element of the academic part of campus, and the intersection with University Avenue is clearly the heart of campus. Pedestrian circulation largely radiates out from this center, and particularly relevant to the housing areas, along the north and south edges of the Great Green. City bus service entering campus from the west and dropping off at the north end of the spine brings students from off-campus residential areas to the heart of campus.
The eastern half of campus is home to a number of traditional academic quadrangles including the original Oval. The Centre Avenue academic spine creates a pedestrian mall that links many of the academic buildings.

The Great Green with its athletic facilities serves as both the major shared public space and the home to many student community amenities. Bounded to the east by the student center, the Green frames the student life aspects of campus. Smaller outdoor spaces such as the new plaza south of the Dining Commons play a critical role in developing student community. The master plan lays out an agenda for developing additional such spaces with new residence halls.
The first Master Drainage Plan for CSU was completed by Ayres Associates in June 1996. On July 28, of the following year, Fort Collins experienced a significant storm event that caused approximately $150 million in damages to campus facilities. Very few of the master planned facilities were constructed prior to the 1997 flood. A draft Master Plan Update was completed in January 2001 with the purpose of identifying the best possible drainage improvement alternatives. The current Master Plan Update was completed by Ayres Associates in April 2003 and includes the as-built analysis of the Phase I and II improvements that were constructed. At the time of this writing additional studies are underway. Consultants for future projects should include analysis of the most current master drainage plan and mitigation strategies.

The existing floodplain on the CSU campus is the result of the following:

- Off-site flows entering the CSU campus from the City of Fort Collins Canal Importation Basin. These flows enter campus from the west side of Shields with a particular concentration at the Shields and Elizabeth Street intersection.
- CSU campus encompasses approximately 375 acres of mixed use development. Much of the campus is developed and highly impervious (which generates a lot of runoff) with the exception of the open space and recreation fields.
- Existing storm drainage system is small and complex, and provides very little conveyance capacity during large storm events, so most of the storm flows travel via overland or surface flow.
- The current Master Drainage Plan document is a summary of the work that has been done, and also provides a guide for additional work that still needs to be done. This Master Plan also serves as a warning as to the complexity and sensitivity of CSU’s storm drainage system.
- No additional work of any kind should be done without looking at the impacts to the storm drainage conveyance and flooding elevations.

CSU completed multiple flood proofing projects between 1997 and 1999 to protect critical facilities. Unfortunately some of these projects adversely affected overall campus drainage patterns. For example the flood proofing for the Eddy and Education buildings raised the ground surface between the Eddy building and Braiden Hall over 2.5 feet. The corridor between the Eddy Building and Braiden Hall is a primary conveyance route for floodwaters leaving the Lagoon pond area.

So raising the water surface elevation in the Oval further reduces the level of protection for those structures. In addition, flood proofing had already been done on the Morgan Library and the Student Center. With the raising of the water surface elevation caused by the flood proofing of the Eddy and Education building, the Library and Student Center flood proofing no longer provided 100-year protection. This problem was later corrected by constructing a channel between Braiden Hall and the Eddy Building. This situation points out the complex and integral nature of the drainage patterns and water surface elevations on the CSU campus.

The Lory student center flood proofing created issues as well with the amount of fill required to build the flood proofing. Although it protects the Lory Student Center its size removed about 7 ac-feet of storage from the lagoon pond, and because it was placed in more of a westerly location that removed an additional 16 ac-ft of storage in the lagoon pond. The loss of storage volume raises the water surface elevation which causes increased spills to the engineering parking lot, which causes increased spills to the Oval area. So in effect, constructing the flood proofing for the Lory Student Center raised the water surface elevation in the Oval. Again this points out the integrated nature of the storm drainage within the CSU campus.

As sites are redeveloped, careful consideration shall be given to grading plans and overall detention requirements as related to the entire main campus. Current direction for development include:

- Acknowledgement and review of the Main Campus Master Drainage Plan, current version.
- Considerations for off site detention to improve the overall detention capacity on main campus as it relates to site density and flood mitigation.
- Drainage and grading plans shall be developed from a campus wide perspective and as deemed necessary employ consultation from a flood mitigation engineer.
CSU has embraced residential learning communities as a proven way to engage students in campus life. These communities take on either an academic or social theme and help students to bond with their peers and the institution. Most of the core campus residence halls house at least one residential learning community.
Available building sites

The potential redevelopment sites were identified as those buildings within the HDS building portfolio that cannot be cost-effectively renovated to meet current housing expectations. Parmalee and Braiden Hall have been identified for potential fourth story additions. Analysis of these existing buildings and sites, to accommodate increased density, is underway at the time of this writing.
Climate Diagram

The diagrams on this page summarize the environmental influences on campus, including prevailing winds out of the northwest and views to the mountains west of Fort Collins. The sun shading diagrams illustrate the changing shade patterns through the day and through the seasons. Creating outdoor spaces that take advantage of sun and shade throughout the year demands careful attention to the site orientation and building massing.

New buildings should be oriented to take advantage of easily controlled natural light from the north and south aspects while minimizing excessive heat gain on the east and west orientations.
Residential Villages/Academic Villages

For a university the size of CSU one of the most important strategies to make students feel comfortable on campus is to break down the size of the University into manageable pieces that student can identify with.

The tradition of residential colleges began at Cambridge and Oxford Universities. These colleges or villages within the larger university included not only housing for students, but housing for faculty and administration, dining facilities and academic programs. In the United States the residential college model has been adapted in many forms and variations. This master plan proposes identifying six on-campus residential learning communities following the model of CSU’s Academic Village to provide undergraduates with the value of the integrated educational and social experience that residential colleges can provide. The Aggie Village sites will be developed to address the needs of upper division, graduate and married students.

High Density/Low Rise

As the University grows there is a limited amount of vacant land adjacent to the main campus. To accommodate growth on campus there is a need to increase the density of buildings. There are two alternatives to increasing density; vertical expansion or reducing the amount of open space. The older residential and dining parts of the CSU campus are typically organized as single buildings surrounded by open lawn. This model allows for great access to views and natural light and allows buildings to be seen as individual objects, but it does not easily create useful outdoor spaces. Extending that planning model to high-rise buildings has been employed on larger campuses throughout the region, and the result has largely been the development of an inflexible housing typology that does not support the development of a sense of student community. The alternative strategy is a more urban one of pushing the buildings to the street edges and shaping interior courtyard spaces. This allows for increased density while keeping the overall building heights in the three to five story range. These lower-rise buildings have been shown to be more successful in promoting student interaction and creating a small scale community that students can identify with.
Connections to open space

The basic organization of the CSU campus is focused on the Great Green. The eastern academic functions meet the green at the Lory Student Center. The north edge of the Green is defined by the athletic functions with housing and dining buildings behind them along Laurel Street. The south edge of the Green is defined by housing and dining buildings including the recently completed Academic Village and Dining Commons.

Sustainability

New construction on campus should recognize the principles and goals of environmental sustainability. Buildings should be designed to use resources wisely and efficiently and support the health and well-being of their occupants.

Site selection should consider transportation options, stormwater run-off and maintaining green space. Landscaping and plumbing systems should be designed to minimize water consumption.

Many building systems affect the amount of energy used including the building envelope and mechanical systems. Integrated design strategies allow budget spent on improving the envelope to reduce the costs of the HVAC system. Energy efficient lighting and taking advantage of daylighting will reduce energy use. The University is well-placed to realize the paybacks from first cost improvements that generate long-term cost reductions. CSU will take advantage of the region’s leadership in renewable energy strategies by incorporating solar and wind power in future projects.

Material selections for construction projects should consider recycled materials, local materials and rapidly renewable materials. Materials should strive to include low-emitting and non-toxic components, coatings and adhesives. Along with adequate ventilation this will ensure improved indoor air quality.

Educating CSU students on the importance of responsible design and construction dovetails well with the education mission of the University. All State funded capital construction projects are expected to align with a Gold level LEED Certification from the US Green Building Council.
Planning and Architectural Design Principles

During the course of the master plan process and the campus Design Review Committee meeting several design concepts developed that are important to each of the sites in the master plan.

1. Lantern

Each of the sites that is adjacent to the Great Green should have a public architectural element that creates identity and connection from each of the residential villages to the Green.

Lantern as a guide
2. Mid-Block Path

Like the path from the dining commons plaza to the east, each site should consider the development of a mid-block circulation route for pedestrians. Public components of the buildings that front on the path will add life to the mid-block space.
3. Courtyard Space

Each residence hall shall shape an outdoor room that will provide a natural outdoor amenity, and a place for informal student gathering in fine weather.
4. Street Wall

The master plan is based on shifting from a model of buildings centered on a spacious lawn to buildings that front on the public streets, thus creating active internal spaces. These street walls shall be articulated through massing and materials to prevent a rigid wall along the street frontage.
5. Massing Variety

New housing and dining buildings should display a variety of massing to extend the “village” character developed at the Academic Village. Massing should consider both the heights of the buildings as well as articulating the various functional components of the residence halls in plan.
Newsom Site Plan Studies

The Newsom site redevelopment is the next phase of the master plan. These sketches consider various ways of looking at the site using the design principles outlined on pages 17-21. Each of the concepts allows for phasing of the work with a partial demolition of the existing Newsom hall. Through a continued collaborative design process, these concepts shall serve as a springboard for continued study.

**Soft Edges Plan**

This option develops street edges buildings while avoiding a continuous street wall. The residence halls shape three internal courtyards that connect to the central pedestrian path. The public and living/learning components line the path bringing life and activity.

**Activated Corners Plan**

This scheme is similar to the previous plan but it articulates the street facades programmatically rather than formally by moving the living/learning spaces to the corners of the site. The entrances and social spaces would still bring life to the central corridor but the living/learning components will activate the ground level along the surrounding streets.

**Village Street Plan**

The internal “street” options inverts the previous two studies and uses the residence halls to define a pedestrian village street system and faces the courtyard spaces outward. This connects those courtyards to the adjacent streets.
ELEMENTS OF THE PLAN

During the planning process the team looked at each of the potential development sites to test each site for capacity based on a desirable density. The individual site studies identified some of the critical issues that are unique to each site as it relates to the campus core, adjacent buildings and circulation and landscape patterns.

The non-orthogonal or “organic” planning forms helps to create the informal village-like quality of the Academic Village, this strategy should be extended to future housing and dining development.

This planning exercise was also used to generate bed capacities for each of the potential development sites. The team assumed a variety of building heights as noted on the summary table in Section 6 and used those along with the building footprints developed here to determine a gross square footage for each site. The gross area was divided by 250 SF per bed to arrive at a bed count. The 250 SF per student was arrived at by using the recent development of the Academic Village as a model. This is based on a semi-suite unit type for most students and allows for some common space and living/learning amenities. See the unit type discussion at the end of this section for more information.
NEWSOM

The mid-block pedestrian path established by the new Academic Village development should extend through the Newsom site and connect to the northeast corner at the Great Green. A new public component should provide an architectural presence on the Green to the north to create a clear identity for this community from the University’s main open space. The phased deconstruction of Newsom will limit the dip in overall bed count.

Alternate plan: A plaza space at the northeast corner will transition pedestrians walking west along South Drive into the mid-block path to the Commons building.
The west side new addition to Rockwell has a south-facing landscaped area that serves as the northern terminus to the Centre Avenue promenade. The new residence hall on this site should frame the western edge of this space and a small public component such as a café or grab and go food option at the southeast corner will provide a transitional marker.

A small interior courtyard will provide dedicated outdoor space for residents.

This site would allow for two or possibly three new residence halls and shall be developed with careful consideration of the Minor in Business Addition to Rockwell Hall.
Aylesworth Site Redevelopment

AYLESWORTH

The current Aylesworth building houses a variety of office space. New space will need to be found on campus for the current users of the building before this site can be returned to housing and dining function.

Like the Newsom site, this site could be phased if necessary.

The northwest corner of the site will be marked either with a plaza or a public building to tie into the prominent intersection of Meridian Avenue and South Drive.

Even at three stories, this site could house roughly 1000 students in semi-suite configurations.

The expanded dining facilities at Braiden provide a natural connection point to the new halls on this site. A plaza analogous to the plaza south of the Academic Village Commons could be successful at this connection point.
AGGIE NORTH

Both Aggie Village sites add enormous flexibility to the master plan because the current residents of the apartments can easily be absorbed by the off campus market.

Aggie North is slated to be re-developed into “super-suites” which would include kitchenettes. These units are intended to appeal to upper division undergraduates who want to remain close to campus. We anticipate that these students will prepare some meals at home and eat some meals in the dining halls.

The west side of the site can serve as surface parking in the short term. As part of the long term plan to move parking to structures at the edges of campus the west side of this site could accommodate a new multi-level parking structure.
AGGIE SOUTH

The master plan has set aside this site for development as apartments. The current Aggie Village buildings are low density and this site study shows that the number of apartments can be doubled within the University massing guidelines.

The apartment residents will have their own kitchens and largely prepare their own meals, but there is still a need for common facilities and amenities. These would include community gathering spaces and be housed in a centrally located building along the south edge of the site. The east edge could potentially house ground-level retail along Centre street as that corridor begins to develop as a pedestrian friendly streetscape.

Co-located parking is more critical in apartment style housing. Apartments with families are more likely to have connections to the off-campus work force and potentially children as residents as well. The central parking area can provide parking for all of the apartments on this site utilizing a single elevated deck parking structure.
A range of issues drive the mix of unit types in campus housing. Today’s high school seniors are more likely to have their own bedrooms at home, and sometimes their own bathrooms as well. Greater levels of privacy and amenities are expected by the students and their parents. Balancing these expectations are issues of costs and the need to encourage students to engage their living community while on campus.

Construction costs and market rental rates put a cap on the level of amenity that can be provided. Initial construction costs are also impacted by the life expectancy of new buildings; the University expects to own and operate these buildings for a long time which allow for quality and efficiency improvements to be amortized over a longer payback period.

For first year students in particular, the housing and dining program should be designed to encourage students to participate in social and academic activities. The core campus halls in this master plan are based on the semi-suite model in order to strike the right balance between providing amenities and encouraging students to use shared public spaces and participate in residence hall activities. This interaction is the basis of building strong community ties that have been shown to support student academic performance. Double occupancy bedrooms provide first year students with a colleague to go through the transition from high school to college.

Suites and apartments become part of the housing mix for upper division undergraduates and graduate students. Though this master plan is focused on core campus undergraduate housing, particularly for first year students, the Aggie Village sites gives the University flexibility to develop a wider array of housing choices, especially for upper classmen.
Master Plan Phasing

The project phasing takes into account a number of variables reviewed by the master plan. All of the sites recommended for new projects contain existing buildings that are currently in use. The order of phasing is based on the condition of existing buildings and the ability to relocate the current users of the buildings.

The table following the diagrams gives the lost and added number of beds for each phase with a running tally and the impact on dining meal count and parking space requirements. The dates shown on the table are an aggressive schedule based on the University’s successful pursuit of the stretch goals for growth; the plan has the flexibility to be extended to accommodate fluctuations in enrollment.

Phase 1 is currently under way and includes the opening of the new Dining Commons and the construction of Building D at the Academic Village.

Phase 2 is replacement of the existing Newsom Hall which is in poor condition with new residence halls and public facilities. This work is broken into two sub-phases to allow half of the current residents to remain in Newsom Hall during the first part of the phase.

Phase 3 is the Allison site; Allison is another building that has served out its useful life.

Phase 4 is the Aylesworth site, currently occupied as office space not a residence hall. This site is later in the master plan because finding new office space for the building’s current users will take some time. This site can be phased similarly to Newsom if necessary.

Phase 4 ALT is the Aggie North site. Because of the challenges of re-locating the current Aylesworth offices, Phase 4 could be the redevelopment of the Aggie North apartments. The current apartment residents can be absorbed into other off-campus apartments, either University owned or private. This gives the plan a useful degree of flexibility.

Phase 5 is the redevelopment of graduate apartments on the Aggie South site.
Master Plan Phases

Phases 1 & 2 - Academic Village / Newsom Site

Phase 3 - Allison Site

Phase 4 - Aylesworth Site

Phases 4 alt & 5 - Aggie Village
## Phasing Summary for Housing, Parking & Dining

### Undergraduate Central Campus Housing

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### Aggie Village Married and Graduate Student Apartments

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<th>University Housing</th>
<th>assumed # of stories</th>
<th>beds @ 3 stories</th>
<th>beds @ 4 stories</th>
<th>beds @ 5 stories</th>
<th>bed or apt count</th>
<th>net beds per phase</th>
<th>cumulative new beds</th>
<th>existing parking loss</th>
<th>parking need by phase</th>
<th>cumulative new parking demand</th>
<th>required net meals per phase</th>
<th>total meals required</th>
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<td>714</td>
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<td>852</td>
<td>714</td>
<td>426</td>
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</tr>
</tbody>
</table>

**note 1:** number of beds used is actual capacity, full design capacity of current inventory is 5540 beds

**note 2:** parking ratio used is 50% of beds

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Anderson Mason Dale Architects

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Financial Overview

The financing plan for improvements to the Housing and Dining Services facilities at Colorado State University assumes that revenues, expenses, and debt service are consolidated system-wide. No one project must be self-supporting; rather, the system as a whole must be financially self-supporting. The plan serves as a framework for the annual planning of operations and capital projects. As such, sufficient latitude and flexibility exist for achieving overall revenue and operating expense targets necessary to generate cash flow to service new debt.

The capacity to service new debt is achieved by increasing rents faster than operating expenses. Baseline room rates are set at a level comparable to the current rate structure. Rents for new unit types reflect their relative gross area per bed. For the duration of the plan, rates are escalated at 5% annually. While this rate of increase is sustainable over the short term, the University must monitor the demand for student housing and its competitive position relative to the off-campus market and peer institutions. The plan assumes that operating expenses escalate from the current level by 3.5% per year. This 1.5% spread between income and expense increases is the primary driver for creating debt capacity. In addition, new residence halls are assumed to operate at about $3.00 per gross square foot less than existing beds.

Development budgets for new construction include all hard costs, FF&E, soft costs, escalation, and financing costs. An annual escalation rate of 3% has been assumed for the duration of the plan. While this rate is low compared to recent experience, it is representative of long-term escalation rates for construction. Major renovation of the existing halls has not been planned; however, 50% of the annual cash flow has been earmarked for capital renewal and replacement.

Only minimal improvements to the dining facilities are included in the plan. The increase in student population residing on campus from 5,890 to 8,950 will be served primarily by excess capacity in the existing dining halls. This increase in students purchasing dining plans and a 5% annual increase in board rates will contribute substantially to the overall financial viability of the system.

The construction of new housing plus the increase in capacity requires that housing construct a total of 2,060 new parking spaces. The total cost of $5,000 per space (for surface parking) is offset by annual fees of $300 per space.

Project phasing may be revised provided that operational continuity is maintained and annual revenue and expense targets are achieved. While flexible, the plan should be updated periodically to evaluate changing conditions and to incorporate actual operating and capital results. Finally, to see the plan through to completion, a culture of fiscal discipline will be required to maintain a balance between market sensitive income streams and the challenge to control operating and capital expense budgets.
FINANCIAL CONCEPTS

Plan is financially self-supporting
- Revenues cover operating costs, debt service, R&R, and reserves

Plan serves as a framework for annual planning of operations and capital projects

Projects are phased to minimize impact on operations and maintain feasibility

Projects cross-subsidize each other

Funding Approach
- New Housing should be self-supporting within three to five years
- Resources from all areas of the Housing and Dining Services will support the housing plan

Creating Debt Capacity
- Rents increase faster than operating costs
- New housing operates more efficiently than existing housing
- Significant premiums for new unit types

Key Variables
- Revenue per Bed
  - Rental Rates
  - Occupancy
- Development Cost per Bed
  - Gross area per bed (i.e., how much space)
  - Development cost per gross square foot (i.e., quality of space)
- Operating Cost per Bed
  - New housing is more efficient
Development Costs
- Construction Costs $220/gsf
- University Developed $3,500/space
- Parking 10% of Construction
- Land & Infrastructure $2,500/bed
- FF&E 28% of Construction
- Soft Costs 3% annually

Housing
- Standard Double $3578
- Standard Single $4578
- Semi-suite Double $4196 - $4720
- Semi-suite Single $4729 - $6154
- Suite Single $6200
- Super-suite Single $6500
- Apartment Single $7200
- Parking $300/space
- Escalation 5.0%

CSU Overhead 5.51% of Net Income

Financing and Reserves
- Existing Debt Service As scheduled
- New Debt Service 5.5%
  - Rate 30 years
  - Term 1.0%
  - Issuance Costs >1.25 target
- Debt Service Coverage
FINANCIAL PERFORMANCE

Net Operating Income – Housing & Dining

Debt Service Coverage

Net Revenue
Operating Cost
Net Operating Income

Campus Program Minimum
DSC Including Transfers

| 38 | Housing and Dining Master Plan | Colorado State University |
• Revenue increases must exceed expenses by 1.5% annually for housing and dining
• The plan does not include any substantial renovations to the existing residence halls or improvements to dining facilities
• There is flexibility in project phasing, but annual revenue and expense targets must be achieved
• While flexible, the plan must be updated periodically to evaluate changing conditions and input actual project results
• HDS must maintain fiscal discipline to achieve the objectives of the plan
Programming Study for the New Academic Village

The Academic Village provided a base line for the master plan work. The Village represents the best example of the aspirations for housing and dining projects realized on campus to date. In particular, the program mix of housing, food service and academic program elements helps to create a complete community within the larger University.

The architecture and planning of the Academic Village has been referenced repeatedly by the University during the master plan process as a model for future projects. The planning of the mid-block pedestrian circulation terminating in the plaza space outside the dining commons is one critical element, as are the variety of massing and the organic plan forms. The exterior materials of the buildings, in particular the stone masonry, and the traditional building forms (sloped roofs with overhangs) contribute to a residential character connected to the long traditions of architecture on campus.

The incorporation of living/learning programs in the residence halls has enriched the lives of the students and extended the academic mission of the University into the housing realm. The academic components also help to keep students on campus beyond their first year. The semi-suite unit type is a successful balance of providing students the privacy they crave while promoting student interaction and community building and maintaining reasonable construction costs. Again, this serves as a proven model for future residence hall programs.

Colorado State University Aesthetic Guidelines

The University’s Aesthetic Guidelines govern the development of new buildings on campus. Divided into three sections, the main campus section would apply to the housing and dining projects included in this Master Plan. Below is a brief abstract of some of the main guidelines that will affect the projects as the master plan is implemented. Please refer to the full Aesthetic Guidelines for a complete explanation of the principles guiding design work on campus.

The Guidelines describe CSU as a “metropolitan campus” organized around the street grid of the city of Fort Collins. Three over-arching principles drive the development of the guidelines:

1. Preserve the sense of place that defines Colorado State
2. Define the framework of buildings and circulation patterns and share a common palette of materials
3. Make the campus a model of environmental sustainability

The main campus is divided into different districts; this master plan is concerned with the residential districts that flank the Great Green. The guidelines lay out the requirements for plazas and quadrangles – large campus social spaces. It also covers smaller patios and courtyards related to individual buildings. This master plan recognizes the importance of the smaller outdoor spaces as related to each new residence hall. New projects should be designed to support the campus circulation corridors, both vehicular and pedestrian.

The buildings that make up campus should help to define the campus edge as well as the entrances to campus. The residential districts play an important role in defining the northern edge of campus along Laurel Street and as the Aggie Village area is re-developed the new residential projects will be instrumental in defining the south campus entry along Prospect Road at Centre Avenue. The Guidelines define how new buildings should relate to new and existing circulation patterns and outdoor spaces. The buildings should be sited to maintain the visual axes that are so characteristic of the campus. The setbacks, build-to lines, massing and scale sections of the guidelines are intended to create a consistent campus architectural fabric.

New buildings should support the same circulation and public space patterns within the design of individual buildings. Major entrances should connect to circulation patterns while service areas should be screened from them. Significant public rooms and program spaces should be on the ground floor where they can help to liven up the site by generating student activity. The buildings should be designed to maximize the benefits of natural daylight. Proper use of daylight can reduce energy demands, strengthen visual connections and increase the health and wellbeing of the residents.

The architectural character of the buildings should reflect the University’s place in time while respecting the existing texture and fabric of the campus. The buildings’ facades should articulate their base, middle and top. The exterior materials should reflect a consistent campus palette including stone masonry at entrances and other significant locations. Local materials should be given preference to reflect the regional identity of CSU as well as reducing the embodied energy in the buildings. Windows in masonry walls should be articulated with lintels and sills. Shading shall be incorporated above windows to control glare and reduce heat gain where appropriate.

In order to maintain a consistent campus identity certain site standards should be maintained across campus. Toward this end the Guidelines define standards for landscape, signage and site furnishings.
ACKNOWLEDGEMENTS

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