CRSA

QUAD DISTRICT MASTER PLAN

JULY 2014

UtahStateUniversity

01 INTRODUCTION

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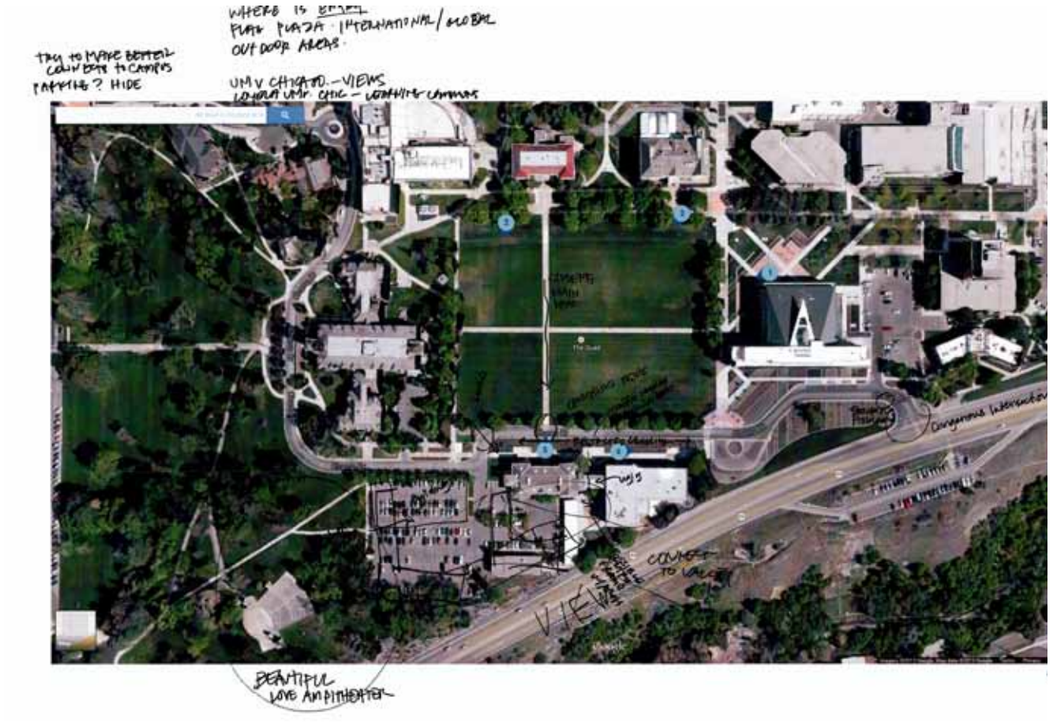
02 DISTRICT PLAN VISION

02.1 OVERVIEW

The historic Quad at Utah State University is the most recognizable place on campus. The Quad District represents the University's brand identity, and supports many of the University's missions. Students, faculty, staff, and alumni all recognize the Quad and its associated structures as a special place that enhanced their time at Utah State. The Quad is a flexible space, and has historically been utilized for activities ranging from military drill space for ROTC to modern events such as A-Day, as well as for daily student recreation activities. It supports both active and passive uses, as well as informal and formal events. It functions as an organizational space for campus facilities. Yet, universities are places of change and growth. New facilities supporting new and different programs are always being considered. This District Master Plan is designed to help the university understand the ongoing purpose of the Quad and guide its future.

The Utah State University Quad District Plan, on the Logan Campus, provides a detailed analysis of spaces and structures in the area defined by the following boundaries (see Section 3.1): Highway 89 on the South to Animal Science and Geology on the North, and from Old Main Hill on the West to the new College of Agriculture Building on the East. The plan also considers the circulation patterns in and out of the district. Existing and planned facilities adjacent to the Quad are reviewed for consistency. The plan process evaluated the structures that directly address the Quad, resulting in a detailed understanding of internal space utilization as well as the external contribution they make to the Quad District. Preservation of the historic structures and their spatial pattern around the green open space of the lawn is a primary consideration in the Quad District Plan recommendations. In addition, the plan has reviewed potential sites for new structures and/or additions to existing buildings within the district.

Multiple colleges are represented on the Quad, each with a growing need for facilities. This plan considers the varied and complex needs and demands for space and growth of the facilities utilized by these colleges on the Quad. It addresses the current and future needs of all of the colleges and departments and recommends key strategies to avoid conflicts. The plan also considers the infrastructure needed to support the functions defined, providing for the safety and wellbeing of all users of the space. The result of the analysis is a phased plan (0 to 10 years, 10 to 20 years, and 20 to 50 year phases) of the Quad district.



Initial feedback on assets and weaknesses in the Quad District

02.2 PLANNING PROCESS

The Utah State University Quad District Plan has been prepared as part of a carefully structured collaborative process. With the needs of the end users in mind, the process began with the development of a feasibility study for a new building conceptually planned for the Quad district. Planned by the College of Humanities and Social Sciences (CHaSS), the new building represents a change to the Quad as currently configured. For details of the proposed building see Appendix Section 6.2 on Page 60. As many on the CHaSS Steering Committee were concerned about what this new change might mean, our team carefully reviewed the size, style, siting, and scale of the facility. The review allowed an initial discussion of the specific Quad characteristics that College and University Administration felt should be respected. As the planned location is directly adjacent to the Ray B. West Building, and near Old Main, many key planning principles required by the Quad study were considered. These considerations are detailed in Section 4 Quad District Plan.

Following the preliminary completion of the CHaSS Teaching and Learning Center Feasibility Study, a broader steering committee was convened to discuss the larger Quad District. Academic facilities on the Quad were thoroughly reviewed and discussed with representatives from CHaSS, College of Agriculture and Applied Sciences, Caine College of the Arts, College of Science, and the Emma Eccles Jones College of Education & Human Sciences, Student Services, and the University Administration. A detailed breakdown of current space utilization was established as a baseline for growth considerations in the future. Representation of the Student Services also confirmed the overall use of the Quad outdoor spaces for events and recreation. Representatives from Facilities also joined the steering committee with direct input on utilities infrastructure, transportation planning, sustainability and preservation.

Additional outreach with department focus groups took place. With tours of facilities and discussion with faculty and staff, an understanding of how teaching takes place in each department was established. Future needs have been catalogued. With this information, recommendations for the Quad district have been developed. Almost without exception, the steering committee recommended preservation of the Quad as a cohesive space. To guide this overall vision, goals and objectives have been established supporting a long term development plan. Design Guidelines have been written to support retention of key character-defining elements for any changes that may occur in the future.

The following key areas of analysis have been completed throughout the planning process:

Transportation & Circulation

- Provide an analysis of Champ Drive, its intersection to Highway 89, and its current and future function as a service, transit, and parking access road.
- Analyze pedestrian connections in the district. Maintain connectivity of existing paths and analyze additional circulation options or safety parameters.
- Calculate parking needs, short and long-term, including parking structures if necessary.
- Review auto drop off zones and transit stops, current and future.

Site Planning

Coordinate Quad District Plan with the Utah State Campus Master Plan and with other district plans, as relevant.

- Coordinate with the College of Humanities and Social Sciences (CHASS) feasibility study for new and remodeled facilities in the vicinity of Family Life.
- Review feasibility studies for the planned reconstruction of the Taggert Student Center and Science Building.
- Ensure Quad Plan supported major concepts from USU Campus Master Plan

Coordinate with Planned New Facilities

At the time of writing this document, one new facility has been proposed in the Quad District. The CHaSS Feasibility document has been reviewed and coordination between the two plans include the completion of a comprehensive analysis of the proposed new site and potential expansion configurations. The site plan and documentation to include:

- Document site opportunities and constraints, including an inventory of natural and human processes.
- Develop a philosophical planning approach to the campus, based on the site forces and constraints.
- Develop conceptual transportation and utility plans, to include road locations and a strategy for utility development. Transportation plan to employ a multi-modal approach, including pedestrian and bicycling paths, and transit. Employ consultants as needed.

- Utility plan components: future paths for utilities, sizing of utilities along main corridors based on rough demand loading calculations, and future location for central energy plant (and identify phase at which it should be implemented)
- Identify potential sites for new buildings
- Identify significant open space, coordinate with Rec and Open Space Plan, and incorporate Quad Tree Plan into final design.
- Summarize parking needs and strategies.

Space Utilization

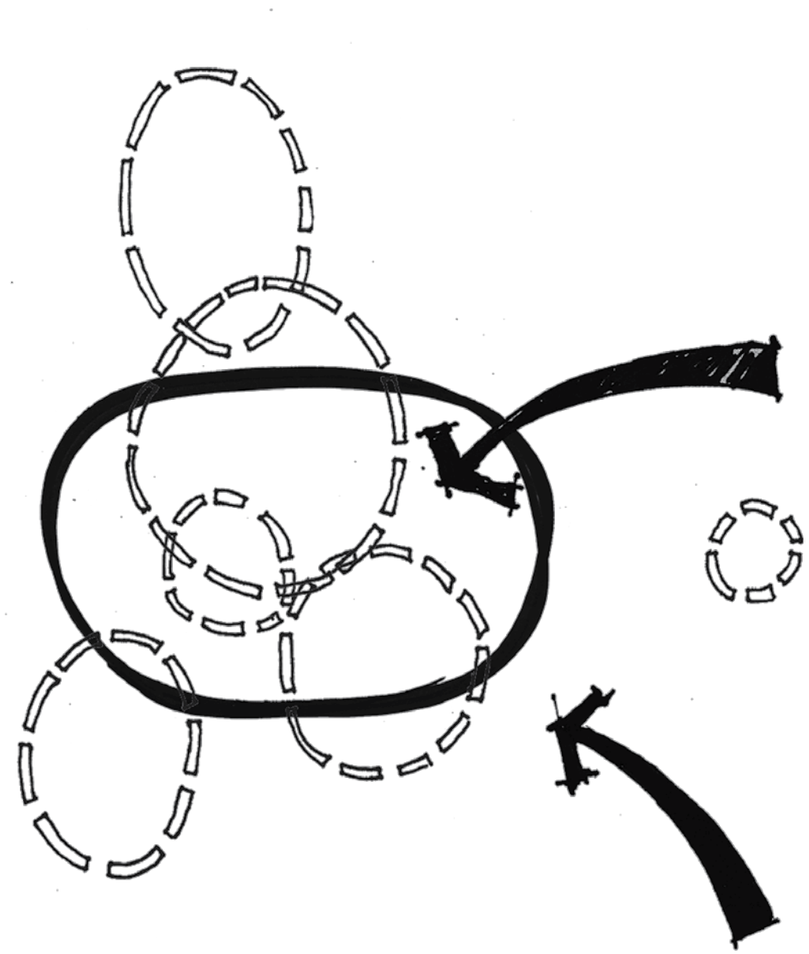
- Review existing building utilization by College.
- Understand how enrollment growth will impact space needs within Quad District facilities.
- Undertake a survey of all impacted colleges regarding current and long range space needs.
- Review plans for the construction of new facilities inside and outside the Quad District to understand impacts on the Quad District Plan.
- Summarize potential solutions to space utilization within the Quad District over the planning period and coordinate with building users.

Programming and Historic Preservation

- Provide a detailed illustrated plan.
- A phasing plan, showing incremental build-out of the site over a 50 year period.
- Identify significant buildings to remain and strategies for long term preservation.
- Identify buildings that will be phased out.
- Architectural style and building materials guidelines should be set forth and should support the historic and regional context and enhance the campus image.

Coordination & Collaboration

- Incorporate input from various user groups – Departments, Colleges, Administration, and Offices such as Facilities, Campus Recreation, and Student Services.



02.3 PLAN VISION

With input from the project Steering Committee and the various focus groups interviewed, the following vision statement has been prepared for the Quad District.

As the campus evolves, the Quad District shall remain the heart of Utah State University, conveying a distinct image and identity rooted in the history of the campus. The primary goal shall be to maintain the feel and function of this area for the continuing enjoyment of alumni, students, faculty, and staff.

Plan Goals and Supporting Objectives

A number of goals and principles that guide future decision making, were outlined at the outset of the Quad District Study. Each provides an opportunity to link the precinct plan back to the overall Utah State University Master Plan. A tangible set of objectives, specific measurable steps, have been developed as tools to meet these goals. The plan recommendations in subsequent chapters support the following goals and further develop project objectives by defining implementation strategies.

GOAL #1: Accommodate projected increase in enrollment

The Campus Master Plan contemplates an overall student enrollment of 26,000 FTE at the Logan Campus. The overall University Master Plan identifies a large number of University-controlled acres that can accommodate this growth. However, the demand of the colleges and departments that reside in the Quad District to accommodate growing programs will result in demand for more space in the Quad District if the goal of college consolidation remains in place. This is evidenced by the CHaSS goal to construct a new facility, and upgrade existing facilities, in the Quad District.

OBJECTIVE 1.1: Many representatives of the Colleges and Departments have suggested that there is currently a shortage of teaching space in the Quad District. An objective of the Quad District Master Plan is to recommend opportunities to increase the quantity of teaching spaces and develop more appropriately sized classrooms to be integrated into campus framework. (See Section 4.1)

GOAL #2: Preserve Utah State University land grant legacy

The Quad has historically supported the unique land grant mission of Utah State by providing a framework for academic teaching and training programs. Historically, the structures around the Quad were home to the original programs taught at the Agricultural College of Utah, including the programs of the former College of Family Life. The College taught trades and skills that are not commonly taught at universities today.

OBJECTIVE 2.1: The open space that represents the Quad District, the Quad itself and Old Main Hill, have hosted numerous unique activities including ROTC training and agricultural instruction**.** An objective of the Quad District Master Plan is to recommend strategies that preserve the integrity of the structures and open spaces that represent the history of the University and the land grant legacy that founded the institution. (See Section 4).

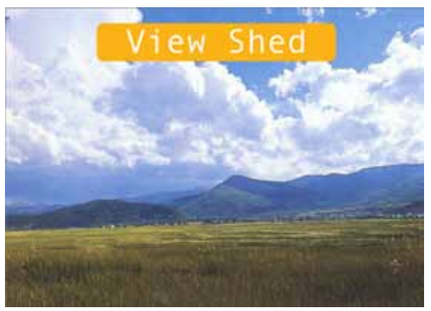
GOAL #3: Maintain a compact walkable academic core

Although the University owns many acres of land to support a growing student enrollment, many of the goals of the University are tied to the benefits that come from a walkable compact academic core. Students are able to live on or near campus, allowing easy access by foot to key destinations by a large percentage of students. Fewer parking stalls increases efficiency of land use and provides environmental benefits. Utah State increasingly has adopted goals that support sustainability and environmental protection principles.

OBJECTIVE 3.1: This plan makes recommendations for space utilization that supports accommodating reasonable increases in land use density to preserve the qualities that are associated with a walkable academic core. An objective of the Quad District Master Plan is to support the goals of Colleges that have space on the Quad that would like to consolidate their departments (or resources used by the department) in the Quad District. (See Section 4.1)

OBJECTIVE 3.2: As active academic and recreational space, the Quad District is a dynamic amenity with a diversity of space types which support the Quad District identity and use. An objective of the Quad District Master Plan is to provide opportunities for additional classroom space and related assets to support the teaching activities of the Colleges that reside in the Quad District.

02.3 PLAN VISION



These images were selected by the Steering Committee as key values or core principles that should drive the district planning process. The recommendations of this plan support the vision statement, providing a framework to follow as future projects are considered in the Quad District.

02.3 PLAN VISION

OBJECTIVE 3.3: Maintain a network of interconnected large and diverse open spaces, which include quads, courtyards, plazas, squares, and recreational fields. An objective of the Quad District Master Plan is to provide opportunities for the continued development of diverse open spaces which serve multiple purposes, from community building to reflection.

GOAL #4: Strengthen and enhance USU's image

Utah State University's branding ties to images of either Old Main or the Quad. This space is easily identified by those familiar with the University. As an iconic space, the University can generate a positive image by simply showing images of the space, or of users in the space. As the central gathering space for activities such as A-Day, or as the gathering spot prior to the graduation march, the Quad represents a key destination for campus students, faculty, and staff.

OBJECTIVE 4.1: Old Main Hill is part of Old Main. This open space allows unimpeded views of Old Main and the University from the community. An objective of the Quad District Plan is to preserve the components of the district that represent the USU image. While the space is not useable for large formal activities because of the slope and tree cover, students often use it for impromptu activities such as frisbee or other recreational activities.

Objective 4.2: An objective of the Quad District Master Plan is to ensure that the primary open spaces in the Quad District remain intact, including Old Main Hill and the Quad. (See Section 5.2)

GOAL #5: Enhance compatibility with the community

The Quad District is the formal access point to the University for many in the community. While daily users will access the University the most convenient point, new users or visitors often access the campus from 400 North or 500 North, especially if their destination is Old Main or the Alumni House. Preservation of access points, views of campus, and parking is important.

OBJECTIVE 5.1: An objective of the Quad District Plan is to ensure views of campus remain intact from approaching streets, as well as preserving access to Old Main and nearby parking. (See Section 4.1)

GOAL #6: Maintain consistent spatial density

An existing pattern of structures and open spaces exists on the Quad. There is one structure on both the east and west sides of the Quad. On the north and south sides there are multiple buildings. The gaps that exist between the buildings and at the corners of the Quad frame the overall feeling of the Quad space. New structures should maintain this pattern. The CHaSS Teaching and Learning Center Feasibility Study strives to follow the pattern by creating a gap between the new structure and the Ray B. West Building. Open views through the corner of the Quad are maintained.

OBJECTIVE 6.1: An objective of the Quad District Plan is to preserve this ratio/ pattern of structure to gaps to ensure that the overall feel and function of the Quad is maintained. This is achieved by the use of circulation paths, intermediate courtyards, and gathering spaces. The CHaSS Teaching and Learning Center Feasibility Study further recommends removing the link between the Ray B. West Building and Family Life Building to re-create the gap between them. (See Section 4.1)

OBJECTIVE 6.2: An objective of the Quad District Plan is to support strategies that are consistent with the Utah State University Master Plan and the Quad District, such as building height, scale, and character. Additional characteristics such as the color, style, and pattern of built facilities should also support the image of USU and the regional context of the site.

GOAL #7: Efficient and safe pedestrian and vehicular travel

Pedestrian safety is a key consideration of the Campus Master Plan. Pedestrian and vehicular access exist along Champ Drive on the south side of the Quad. Long-term planning recommends changes that will reduce many of the trips that are generated by activities in the area. The CHaSS TLC Feasibility Study contemplates the impacts of relocating the uses associated with the Gun Shed and Lundberg Hall, which would restrict the vehicles along Champ Drive to only those accessing the parking for CHaSS, Old Main, and the Alumni House.

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OBJECTIVE 7.1: An objective of the Quad District Plan is to illustrate improvements to Champ Drive with the goal of creating a pedestrian friendly actively programmed urban space. This plan recommends strategies with the goal to limit auto use, thus allowing a re-visioning of Champ Drive. (See Section 4.4)

OBJECTIVE 7.2: An objective of the Quad District Plan is to increase the capacity of walks on the Quad. These recommendations also include a consideration of landscape materials in the areas around the key pedestrian zones such. (See Section 4.1)

GOAL #8: Sustainability and energy efficiency

Closely linked to the goals of a walkable academic core, sustainability and energy efficiency are key principles supported by Utah State. A robust utility distribution system exists around the Quad Core (See Section 3.5). While some upgrades are recommended to support the new CHaSS facility, significant capacity is available to support existing and potential new structures in the future. It will be less costly to develop infrastructure for new facilities in the Quad District than it will be on less dense areas of campus such as the Innovation Campus. Additionally the central campus, including the Quad District, is tied to the central campus plant which maximizes energy use.

OBJECTIVE 8.1: An objective of this plan is to advocate for strategies that support the goals of sustainability and energy efficiency. New facilities are planned to be placed in locations that can take advantage of existing infrastructure. (See Section 5.4)

Steering Committee meeting to develop the plan vision

03 SITE ANALYSIS & RESEARCH

03.1 EXISTING CONDITIONS & FINDINGS

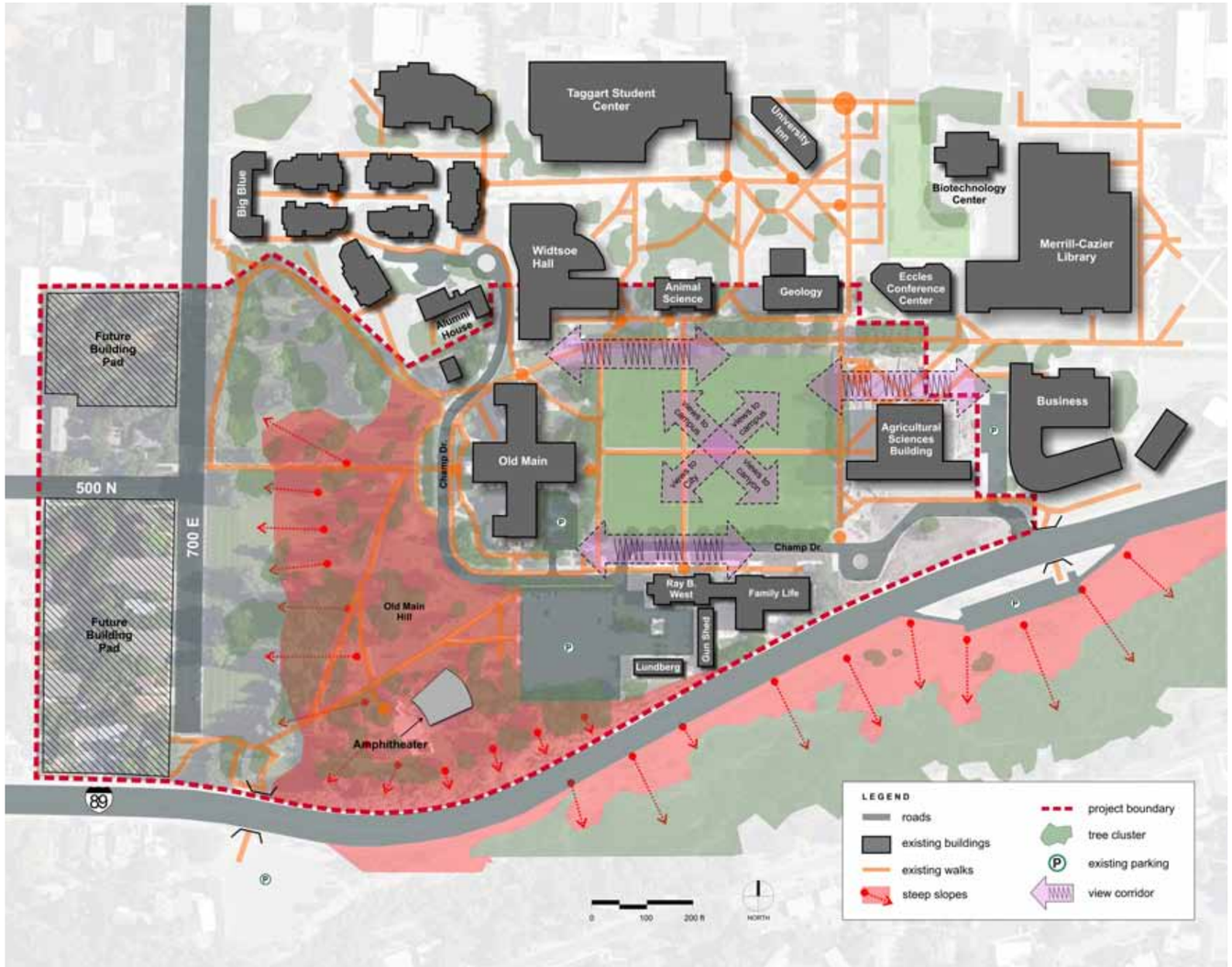
Prior to the development of plan recommendations, a detailed analysis of existing conditions was developed. The following baseline information is provided to support the plan recommendations.

Circulation Networks
The core of USU's campus intersects with the two primary pedestrian corridors—the north-south axis adjacent to the east side of the Quad and the east-west corridor along the north side of the Quad. These primary corridors link the campus to the community. Secondary pathways in the development area of campus are ample, divert from and reconnoiter to the primary paths with fluidity and ease. Pedestrian circulation corridors are prominent and easily interpreted, facilitating travel throughout the entirety of campus. Mature trees and ornamental vegetation straddle these thoroughfares; they are accompanied with occasional art pieces that engage the viewer.

Views
Views within the development area include the Historic Quad, Old Main and Agriculture Sciences Building among many others. These views are highlighted by the historic maple trees lining the Quad that turn a vibrant red during the fall. The campus views extend over the agricultural Cache Valley; the roots of the University. The Wellsville Mountains provide a majestic backdrop.

Topography
Historically, the topography of USU's campus has shaped the pattern of its development and circulation. Old Main Hill has a gently sloping descent which has served as a venue for many outdoor activities. Its mature vegetation brings a forest-type ambiance, affording a member of the campus community solitude, tranquility and peace.

Key Destinations
The current layout of the campus easily leads the user directly to key destinations. Iconic landmarks such as Old Main, the Quad, the Island Overlook and Old Main Hill are served efficiently by the circulation networks on campus.



Existing conditions analysis of the Quad District

Quad Lawn

The Quad lawn at Utah State University in many ways is the center of student life on Campus. It is well-utilized and in high-demand for both formal and informal forms of student recreation, academic instruction and social gathering for students and faculty. This is because it is the primary green space that is centrally located in the core of the campus. The setting of the Quad, anchored by Old Main, as well as several other historic buildings, sets the academic tone for the campus, while views to Logan Canyon and Cache Valley are a constant reminder to students of the beautiful region in which the campus is located.

The Quad, Old Main and Old Main Hill are considered signature destinations on campus for marketing Utah State University to potential students and faculty. As such, these iconic features of the Quad district should be preserved and respected, while considering future options for growth and development in the district.

The lawn currently supports a wide range of uses. These include formal, passives uses such as academic conferences and gatherings, to more informal, active events such as intermural sports and impromptu recreational gatherings. Because of its iconic nature, during the academic school year it is in high-demand both day and night. This demand presents some scheduling challenges, and administrators strive to balance space utilization. The demand however is typically able to be accommodated at other locations on campus when the Quad lawn is not available.

Another reason for its popularity is the flexibility of the space. The Quad lawn can accommodate a wide variety of events and group sizes. Two paths divide the space into four distinct grassy spaces, two smaller and two larger, which enables the lawn to accommodate several diverse user groups of varying programs simultaneously.

Larger events, on the other hand, such as concerts, gatherings and the 'Day on the Quad' event, are not as easily accommodated. There is insufficient access and parking for large delivery trucks. No public restroom facilities exist at the lawn. Although daily users utilize restroom facilities in the adjacent buildings, they are insufficient to meet the needs of large groups. Portable restrooms are delivered to the site for large events. Because there are no outlet boxes at the center of the lawn, when power is necessary to support an event, extension cords are used.

None of these issues pose serious threats to the long-term viability of the utility and popularity of the Quad lawn. Because the space itself is so iconic, the benefit for utilizing this location outweighs the inconveniences posed by the lack of service parking, insufficient permanent restrooms, and adequate power supply. However, upgrading these facilities/utilities in the long-term will ensure its continued success and enable it to continue to serve as the heart of student life on the USU campus.

The Quad lawn and Agricultural Sciences (left) and Family Life (right)

Classroom Space

One of the most frequently mentioned inadequacies of the existing facilities in the Quad District is insufficient functional classroom space. The demand currently outweighs the supply, which is limited by several factors. Because some of the instruction spaces, like classrooms in the Animal Science and Family Life Buildings, have no air-conditioning they are unavailable for use during summer sessions. ADA accessibility to classrooms in the Family Life Building is inadequate. Some of the Quad District classrooms require additional technology equipment such as high-definition projectors to be effective for current teaching methodologies.

Two other concerns voiced about the current instruction spaces in the Quad District include:

- light fixtures in the older facilities that produce inadequate illumination.
- classrooms configurations that are inflexible, and pose challenges to newer teaching pedagogies. These rooms have too many tablet-arm chairs which overcrowd the space, or fixed seating that preclude rearrangement of the space for breakout and group sessions.

Another contributing factor to the need for additional classroom space, is that many faculty offices are in the Quad District. Travel time between office and classroom is important to faculty members who prefer to teach in rooms as close as possible to their offices. This enables them to maximize the amount of time they have available for students and research.

A variety of sizes and configurations are needed to meet the demand for instruction spaces in this district. The greatest need is large lecture halls accommodating 150+ and 300+ students and small seminar rooms accommodating 10-15 students.

Although classes are scheduled very efficiently during the peak hours of 7 am to 3:30 pm, there are insufficient classrooms to meet the demand. In order to meet the need, faculty are asked to teach elsewhere on campus, or classes are scheduled to begin in the Quad District buildings later than 3:30 pm. The current schedule has room to utilize more scheduling after 3:30 pm, however both students and faculty typically prefer to meet within the typical workday hours from 8am - 5pm.

Example of an existing classroom in the Geology building

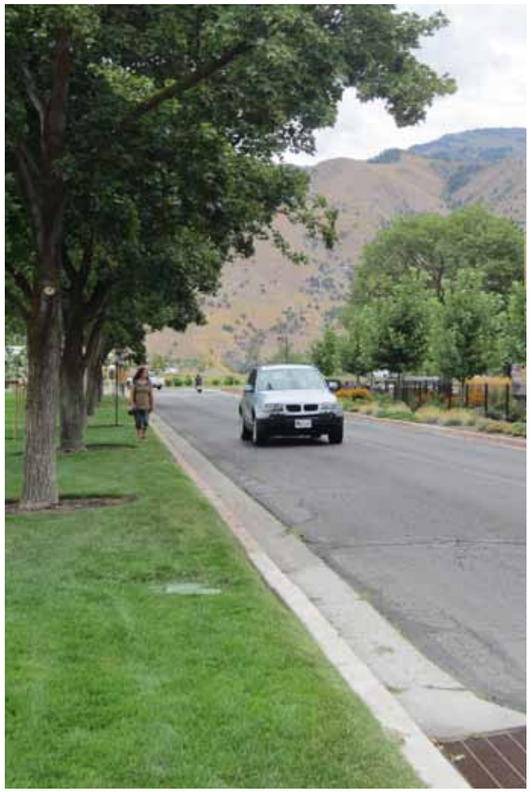
Departmental & Faculty Space

Departmental vs. central scheduling is frequently debated. Allowing departments "ownership" of their spaces allows them to upgrade the spaces when necessary and to ensure ongoing maintenance. This policy, however, can lead to inefficient use of existing facilities if the deparments hold onto space, even if it is not actively being used, fearing they will be unable to access the space when necessary. As Quad District facilities are currently in such high demand, however, these particular spaces are typically well-utilized.

Consolidation of facilities for Colleges and Departments is a serious concern for several of the user groups in the Quad district, that have personnel, activities and resources dispersed across campus. In one extreme case, the College has facilities in five different buildings across the campus. As such, the College must incur significant expenditure to provide administrative staff at each of these locations. Collocation would allow more collaboration and more efficient use of funds and other resources. In several cases, long term plans call for reunification of the departments and/or College.

Some of the Colleges and Departments have particular requirements in their instruction spaces and plan to construct facilities to meet their specific needs. However, in the short term, convenience of location (on the Quad) outweighs individual limitations, outdated features and other inconveniences. Many wish to remain in place on the Quad until a move would result in a significant improvement in facilities. These groups whose long term plans would have an impact on facility use in the Quad district are discussed in detail in Section 4.3 Space Utilization.

Existing facilities inside Ray B. West



View of Champ Drive facing east

03.1 EXISTING CONDITIONS & FINDINGS

Circulation & Access

The open nature of the Quad lawn creates unobstructed viewsheds within the district, as well as views to Logan Canyon and Cache Valley. This siting and easily identifiable iconic buildings such as Old Main, allows students, faculty and visitors to easily orient themselves and to navigate from the Quad District to other points on campus. Visitor Parking is available in the Big Blue Parking Terrace. A few metered stalls adjacent to Old Main are also available, however these can be difficult to locate. Wayfinding signage should be investigatied to help orient those visitors who are unfamiliar with the campus.

Ample pedestrian access is provided by wide sidewalks on the east and west sides of the Quad. The north edge of the Quad features a double promenade. As such, during the academic school year, there is high pedestrian traffic on these three sides of the lawn. Pedestrian access on the south side of the lawn will need improvement to encourage use. Currently there is no sidewalk on the south side of the lawn, creating an uncomfortable and potentially unsafe transition from the lawn to Champ Drive. Immediately south of Champ Drive a wide sidewalk with generous landscaping amenities provides access to the Ray B. West and Family Life Buildings, however the access from these buildings to the Quad lawn is problematic. Although the sidewalk can be accessed from both ends (east and west), there is only a single access point and crosswalk between the lawn and the south sidewalk. Fencing has been installed in the planting strip on the south side of Champ Drive to keep students from crossing the roadway illegally. Improving access, safety and beauty along the south side of the Quad lawn will be discussed in Section 4.4 District Transportation.

The overall pedestrian experience is pleasant for visitors and daily users alike in the Quad District. Mature growth tree canopies create a cool microclimate on the sidewalks during hot summer months, as well as a visually appealing environment for pedestrians. Interpretive displays and public art has been installed at several locations. Signage and wayfinding is satisfactory but could be improved to assist users in navigating to other points on campus. Building signage is sufficient, with the exception of the Animal Science Building which has no permanent sign.

Lighting for users of the lawn at night is sufficient, however the walkways leading to and from the Quad District may require additional lighting to create an environment that pedestrians can feel safe using after dark. Emergency call boxes were suggested as a potential option to enhance safety in the Quad District.

Cyclist access and facilities in the Quad District are well-addressed. The Quad contains multiple bikeways, bike racks and bike supported public transportation access points. The USU Bicycle Master Plan guides the development of bikeways on campus, and the Quad District enjoys access from three bikeways. Ample bicycle parking is located throughout the Quad District. The facilities located near building entrances are heavily used, but those bike racks located further away are underutilized. Apparently, there is not a problem with overall capacity, and convenience is dictating usage. Some bike racks could be relocated in order to meet demand where it is highest.

The 2011 USU Bike Plan indicates a bikeway exists along Champ Drive. This bikeway allows cyclists to share the roadway with automobiles as a route around the south and west sides of campus. It also provides convenient access to Old Main, the Taggart Student Center, the LDS Institute and multiple recreational offerings on the north end of campus. Shared use pathways (bikeways on sidewalks) exist on the north and east walks adjacent to the Quad lawn, and are identified in the USU Bicycle Master Plan as congested areas. In these areas, painted marking on the sidewalks instruct cyclists to “yield your wheels” (yield to pedestrians). Although not ideal, this system appears to currently function well. These pathways provide thoroughfare access to cyclists heading to distant points north and east of the Quad District. In front of the College of Agriculture Building, a bike supported public transit stop provides access to and from campus at a bus turnaround, providing campus-wide (Aggie Shuttle) and regional (CVTD) mobility options.

Vehicular access considerations along Champ Drive will be discussed in-depth in Section 4.4 District Transportation.

03.2 HISTORIC BUILDING SURVEY

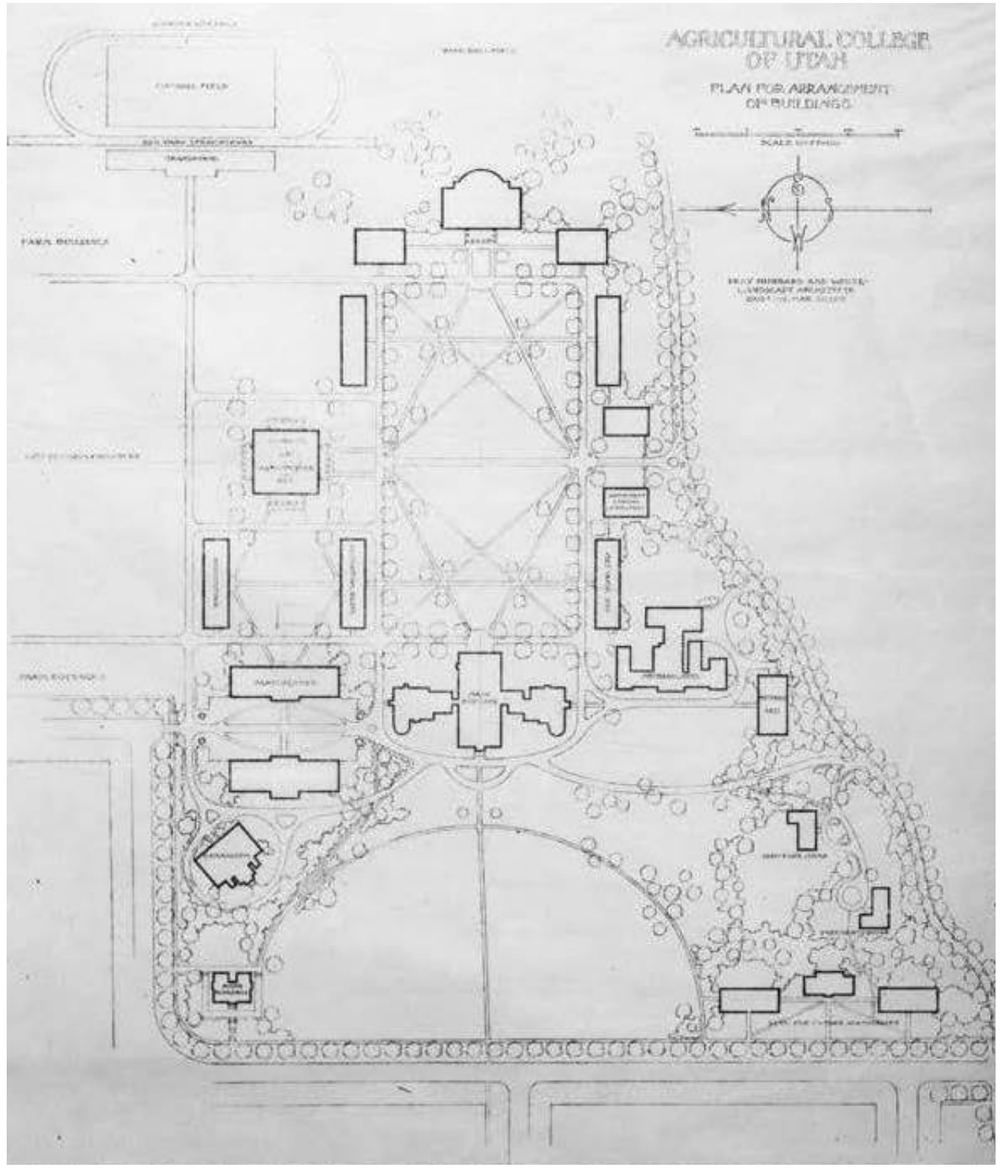
While Old Main is synonymous with the founding of the Utah State University and the Logan campus, the Quad itself developed later. Its origins trace to the 1912 Campus Master Plan, prepared for USU by White, Hubbard, and Pray from Boston, MA. The 1912 plan depicted the establishment of a Quadrangle east of Old Main, with both the Quad and Old Main Hill defined by new buildings at the edges.

New buildings encroaching on the hillside did not materialize, and this area remains primarily as green space. However, the Quadrangle east of Old Main was initiated. As the campus and college grew during the following years, the Quad became the core site for new buildings and building clusters. This physical and spatial organization remains visible and viable today. In quick succession, the Quad was defined by the Animal Science Building , Engineering (Ray B. West) Building, and Plant Sciences Building on the north and south edges, and the Library on the east. Support from the Public Works Administration funded additional buildings on campus, including the Art Deco Family Life structure on the south side adjacent to the Engineering Building . The Quad remained the core of campus through the 1940s, accommodating the steady growth of the school. In the years following World War II, enrollment growth facilitated by the GI Bill, led to rapid physical expansion in the 1950s and 1960s and gave the campus its present dimensions.

Today, most of the original buildings on the Quad remain and contribute to its historical significance and spatial integrity. The library was relocated in a new structure to the northeast of the Quad in the 1960s and that structure was demolished. In 2011, a new building for the College of Agriculture was completed as an anchor for the east end of the Quad.

This section provides a summary overview of the exterior and interior integrity of the five historic buildings on the Quad: Old Main; Animal Science; Geology; Family Life, and Ray B. West. We then provide a brief assessment of each historic building, summarizing the background and an evaluation of current conditions for each.

The exterior and interior integrity of each historic building on the Quad was evaluated in relation to the degree (high, moderate, low) of original (and compatible) character defining elements they retain.



03.2 HISTORIC BUILDING SURVEY - Exterior/Interior Integrity

Exterior Integrity: Elements that contribute to the exterior integrity are the building materials, architectural details, windows and doors, and massing and form.

High:
- Family Life Building
- Animal Science Building

Moderate:
- Old Main Building
- Ray B. West Building
- Geology Building

Interior Integrity: Elements that contribute to the interior integrity are the finishes, fixtures, circulation paths, and architectural details.

High:
- Family Life Building

Moderate:
- Old Main Building
- Animal Science Building
- Ray B. West Building

Low:
- Geology Building

Exterior of the Animal Science Building

Exterior of Geology

Interior of Family Life

Interior of Geology

03.2 HISTORIC BUILDING SURVEY

Old Main Building
Architectural Style: Campus Gothic
Built: 1889
Architect: C.L. Thompson
Additions/Renovations:
1892/3 - East central section and North wing (Architect: Carl C. Schuab)
1901/2 - West central section and Tower (Architect: H.H. Mahler)
1988/90 - East entrance and rehabilitation following fire (Architect: Design West)

Listed on the National Register of Historic Places: 1972

Old Main is the landmark building of the Utah State University campus. It was constructed concurrent with the founding of the college in 1889 and remains the State's oldest academic building still in use.

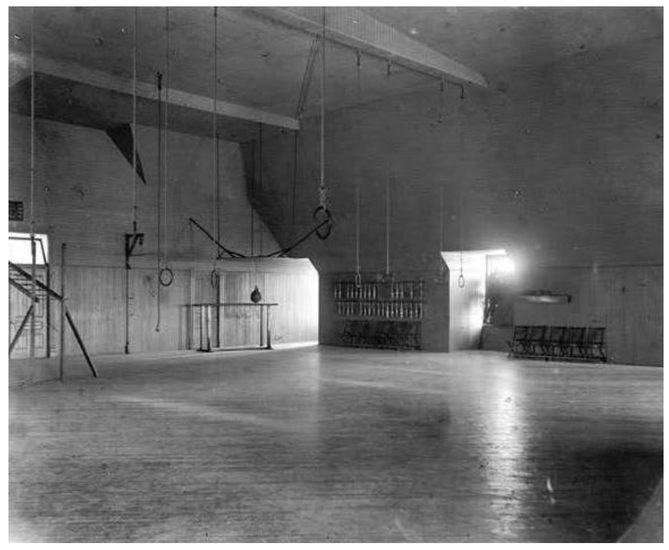
The site for what was known as the College Building was chosen to be due east of the end of what is today Fifth North Street. The south wing was completed first in 1890. As more money became available, the building was enlarged and redesigned in 1892. The tower and front (west) portion of the building were completed in 1902.

Because its design and construction was staggered in phases, and different architects were retained, the building as a whole does not feel entirely cohesive. However, this does not minimize its iconic presence. Old Main is generally recognized as the heart of campus and forms the basis of the identity of USU.

It has hosted a wide range of uses over its long history. In its early years, the building included a gymnasium and cafeteria. Throughout its history, it has always included classroom space, and that remains the case today. It also houses several of the administration offices, including the President's Office, and a handful of academic departments.

To accommodate this range of uses over the years, the building has undergone numerous reconfigurations and remodeling of its interior space, which has altered its original character. Its overall integrity however is moderate to high, both on the interior and exterior.

Current View of Old Main looking west from the Quad lawn



Historic photo of the gymnasium in Old Main, c. 1895

03.2 HISTORIC BUILDING SURVEY

Animal Science Building
Built: 1918
Architect: Cannon & Fetzer
Additions/Renovations:
1940/41 - Remodeled to include laboratories for nutrition and wood grading
1979-81 - Rear addition to house elevator shaft

The Animal Science Building was constructed to provide space for the Animal Husbandry, Veterinary Science, and Poultry Departments. The creation of this space allowed the college to expand and emphasize its work in dairying and animal husbandry.

The style of the building was designed to match the other buildings on campus built during this period. With a light colored brick and decorative archways with columns on the main facade, the building retains much of its exterior character.

The building has remained largely as academic instruction space and currently houses the Statistics Department. While changes have occurred to the interior through various remodels, discernible features of its original character remain.

Main Entrance to Animal Science

Original radiator

Classroom in Animal Science with plentiful natural light

03.2 HISTORIC BUILDING SURVEY

Geology (Plant Industry) Building
Built: 1918
Additions/Renovations:
1966-68 - Greenhouses constructed to rear of building

The Plant Industry Building was constructed in 1918, along with the adjacent Animal Industry building and the Agricultural Engineering Building across the Quad. As one of three new structures, this building increased the instructional space on campus.

It hosted the Biology Department for many years and is the current home of the Geology Department.

Numerous alterations have occurred on both the exterior and interior of the building to accommodate changing needs and uses. Its exterior integrity is low to moderate, with alterations that obscure some of its original architectural character. The interior is basically devoid of any original character, save the basic circulation pattern.

View of the Geology (Plant Industry) building, 1921

Biology class in the Plant Industry, c. 1961

Current view of interior, Geology (Plant Industry)

03.2 HISTORIC BUILDING SURVEY

Family Life (Home Economics/Commons Building)
Architectural Style: Art Deco
Built: 1935
Architect: Leslie Hodgson & Myrl McClenahan
Additions/Renovations:
1960 - Cafeteria in the basement was remodeled for labs, classes
1982 - Family Life link connects building to Ray B. West, includes elevators and computer lab space

Listed on the National Register of Historic Places: 1985

The Family Life Building provided housing for one of its fundamental fields of instruction, Home Economics.

The building was constructed using federal Public Works Administrator funds. It was one of over 230 public works buildings constructed during the Depression years under New Deal programs. The building balanced the other structures facing the Quad that had been built between 1915 - 1920, and gave the Quad a sense of completion as the academic core of the campus.

It functioned as the social center of the college, with the cafeteria and student activity rooms. it remained so until the construction of the student center in 1953.

The exterior and interior of the building both have high historical integrity. While the exterior is Art Deco, the interior features a variety of styles. The design of the lounges were inspired by the American wing of the Metropolitan Art Museum.

Several interior details contribute to its integrity, including original radiators, flooring, and doors.

Family Life, 1960s

Original radiator

Stairwell, with original flooring, doors, and windows

03.2 HISTORIC BUILDING SURVEY

Ray B. West (Engineering) Building
Built: 1918
Additions/Renovations:
1982 - A three story stair and elevator tower which links Ray B. West and Family Life and includes small scale office suites and a computer lab.

The Ray B. West Building was one of a series of buildings constructed around the Quad in 1918. It was originally designed to host the Engineering Department and did so through the 1950s. It was later used by the College of Education and today is the primary home of the English Department.

It provides balance and symmetry with the Animal Sciences Building across the Quad. Both are approximately 30,000 square feet in size and are oriented and designed similarly.

Several modifications have been made, both to the exterior and interior. Despite these alterations, the overall integrity is moderate on both exterior and interior.

Alterations on the exterior include a new entrance articulation on the east, Quad-facing side; elevator shaft, and the link connecting the building to Family Life to the east.

On the interior, the most major modifications are related to the introduction of modern mechanical equipment. Ceilings have been dropped nearly four feet to accommodate ventilation ducts and pipes.

View of Ray B. West from the Animal Science building

Opened-up stairwells

Dropped vs. original ceiling height

03.2 HISTORIC BUILDING SURVEY

W. W. Lundberg Building
Built: 1950

Gun Shed
Built: 1934
Additions/Renovations:
1971 - office remodels
1991 - reconfiguration of floorplan to accommodate multiple classrooms

The Lundberg Building and the Gun Shed, located to the south of the Ray B. West building, are utilized primarily by the Interior Design Department. The tall ceilings of the Lundberg Building offer desirable natural daylight for the studio classes.

The exterior integrity of both buildings is moderate to high. The interior integrity is moderate.


Interior Design studios, Lundberg


Interior Design studios, Lundberg


Interior Design studios, Gun Shed


Interior Design studios, Gun Shed

03.3 SPACE UTILIZATION

A review of space utilization within the Quad District allows USU the ability to proactively respond to current and future space needs, both within the precinct and across campus. The planning team reviewed existing space utilization, discussed future space needs within the district with Colleges and Departments, and reviewed across campus space need in order to plan for long range changes.

Existing Conditions

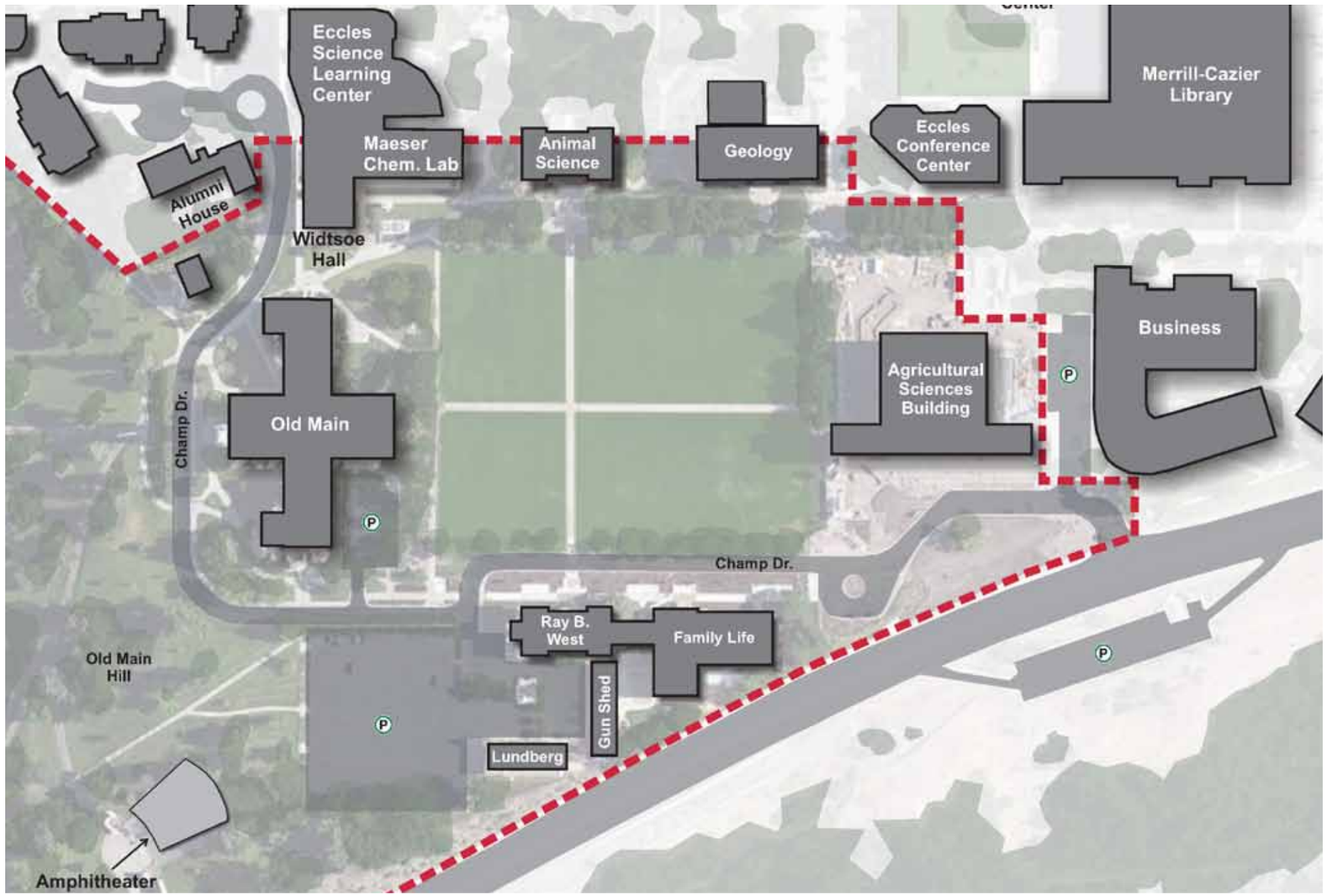
There are eleven buildings within the Quad District that support academic instruction and administrative functions (see map on page 27). Total space available within these facilities is just over 600,000 sf. Many of these facilities date to the early Twentieth Century and are defined by smaller than average building footprints, efficient floor plan layouts, but short structural spans limiting flexibility and internal space size. The newest facilities, housing the College of Science and the College of Agriculture and Applied Science, were designed for their current purposes and the associated colleges have not requested modification to space or use at this point.

Space is utilized in these buildings in a number of forms, primarily driven by the university's academic mission: academic instruction space (managed by department or the registrar's office), academic offices, academic support space, and lab/studio areas (managed by departments). The bulk of the remaining space are building support spaces, primarily building circulation (halls, stairs, lobbies), building systems (shafts, mechanical/ electrical chases and rooms), and building support spaces (restrooms, janitorial and maintenance spaces).

The efficiency of building space utilization is called the net-to-gross ratio and compares the primarily occupied space (in this case academic mission drive spaces) to building support spaces. The sample illustration that follows illustrates the net areas as classrooms, offices, labs, etc. and gross areas the building support spaces. The less space allocated to building support, the higher the net-to-gross ratio. The buildings within the Quad precinct have an average net-to-gross ratio of .62, illustrating they are being efficiently used. This is an important factor that must be reviewed, as highly efficient buildings mean more space to get work done, although there is a trend in the current higher education marketplace that suggests that lower net-to-gross ratios may indicate a larger proportion of space is set aside to support collaboration and community building. It is apparent in many of the Quad District facilities that there is limited circulation space (narrow halls, lack of queuing area), little or no collaboration space (group or individual study spaces, widening of hallways to accommodate informal meetings), and limited hallway display space.

No.	*Building Name*	*Overall S.F.*	*Net-to-Gross*	*Occupants*	net
1	Old Main	172,262	0.50	Adminstration	27,665
				College of Humanities and Social Science	36,535
				College of Engineering	11,091
				University Scheduled Classrooms	10,010
5	Agricultural Sciences	131,019	0.52	College of Agriculture & Applied Sciences	61,984
				College of Humanities and Social Science	2,865
				University Scheduled Classrooms	3,778
16	Family Life	28,444	0.72	College of Arts	5,538
				College of Agriculture & Applied Sciences	3,562
				College of Education	7,396
				College of Humanities and Social Science	470
				University Scheduled Classrooms	3,485
12C	Lundberg	4,629	0.83	College of Art	3,043
				College of Education	809
12D	Gun Shed	3,402	0.86	College of Art	
				College of Education	
13	Ray B West	23,999	0.62	College of Humanities and Social Science	11,854
				University Scheduled Classrooms	3,092
18	Geology	44,959	0.61	College of Humanities and Social Science	920
				College of Education	1,995
				College of Science	22,399
				University Scheduled Classrooms	2,134
19	Animal Science	28,460	0.52	College of Science	12,891
				University Scheduled Classrooms	1,811
21	John A. Widsoe	87,120		College of Science	
				University Scheduled Classrooms	1,984
21A	Sherwin Maeser Lab	37,804		College of Science	
21B	Eccles Science Learning Center	39,431	0.43	College of Engineering Computer Science	2,231
				College of Science	7,410
				University Scheduled Classrooms	7,152

03.3 SPACE UTILIZATION



Existing facilities within the Quad District

04 QUAD DISTRICT PLAN

04.1 DISTRICT PLAN CONSIDERATIONS

Quad District Spatial Layout

The Quad District is represented by a specific set of design elements. While some minor design elements might be adjusted, the major elements must be maintained if the same feel and function is to be maintained. The following major design elements, as directed by the project steering committee, shall remain substantially intact. Minor adjustments to these are recommended in the plan, but are not intended to change overall form or function of the Quad District.

District Edges

While this document studies the overall Quad District, specific edges within the district define the Quad District Core. These edges are the structures that surround the Quad. The size, scale, color, and texture of these structures are critical to the definition of the Quad. The character of the five historic structures is also a primary contribution to the district. Thus, this plan includes recommendations that strengthen these edges. The following aspects of the physical layout of the structures are important:

- Width of structures facing the Quad
- Circulation space between structures facing the Quad to spaces outside the Quad
- Circulation between structures and the Quad
- Height of structures
- Color and texture of materials and primary landscape elements (trees primarily).

By virtue of these important aspects, the following constraints are placed on the Quad District.

- Upgrades or changes to any structure on the Quad must not substantially modify the existing architectural style.
- New buildings should only be constructed on designated future building sites in this plan or if an existing building fails. Additions may be considered on the rear side, if buffered from the Quad by the existing structure.
- No structure in the Quad District should exceed four stories to avoid competing with Old Main. Strategies for masking height may include the use of set back to upper levels or using basements to accommodate program elements. Additional density, in the form of taller buildings, should be considered in other districts on campus to compensate.

District Uses

The four turf quadrants that make up the fields of the Quad are considered essential to the Quad District. This space supports the look and feel of the district, but also supports important campus-wide functions. The following aspects of the Quad District are supported by the turf fields:

Architecturally Significant Views and Spaces

- Width of the Quad (north to south) is based on the width of Old Main as outlined in the 1911 Campus Master Plan. Therefore, it is recommended that no attempt be made to narrow the Quad, which would distract from the presence of Old Main.
- Length of Quad (east to west) is less dependent on the original master plan, however it is now established by historic buildings on each side. View of Old Main and the Quad are anticipated to be available from the new Huntsman Hall, as it sits at the end of the east extension of the Quad.

Student Recreation

- The existing Quad field sizes are as follows, supporting a range of student recreation options. The Quad is often used by international students as other formal recreation fields on campus don't support all game types (for example cricket).

	WIDTH (E-W)	WIDTH (N-S)	AREA		WIDTH (E-W)	WIDTH (N-S)	AREA
NE Quad	333'	232'	77,256 sf	**SE Quad**	333'	192'	63,936 sf
NW Quad	177'	232'	41,064 sf	**SW Quad**	177'	192'	33,984 sf

Due to these important aspects, the following constraints are placed on the Quad District.

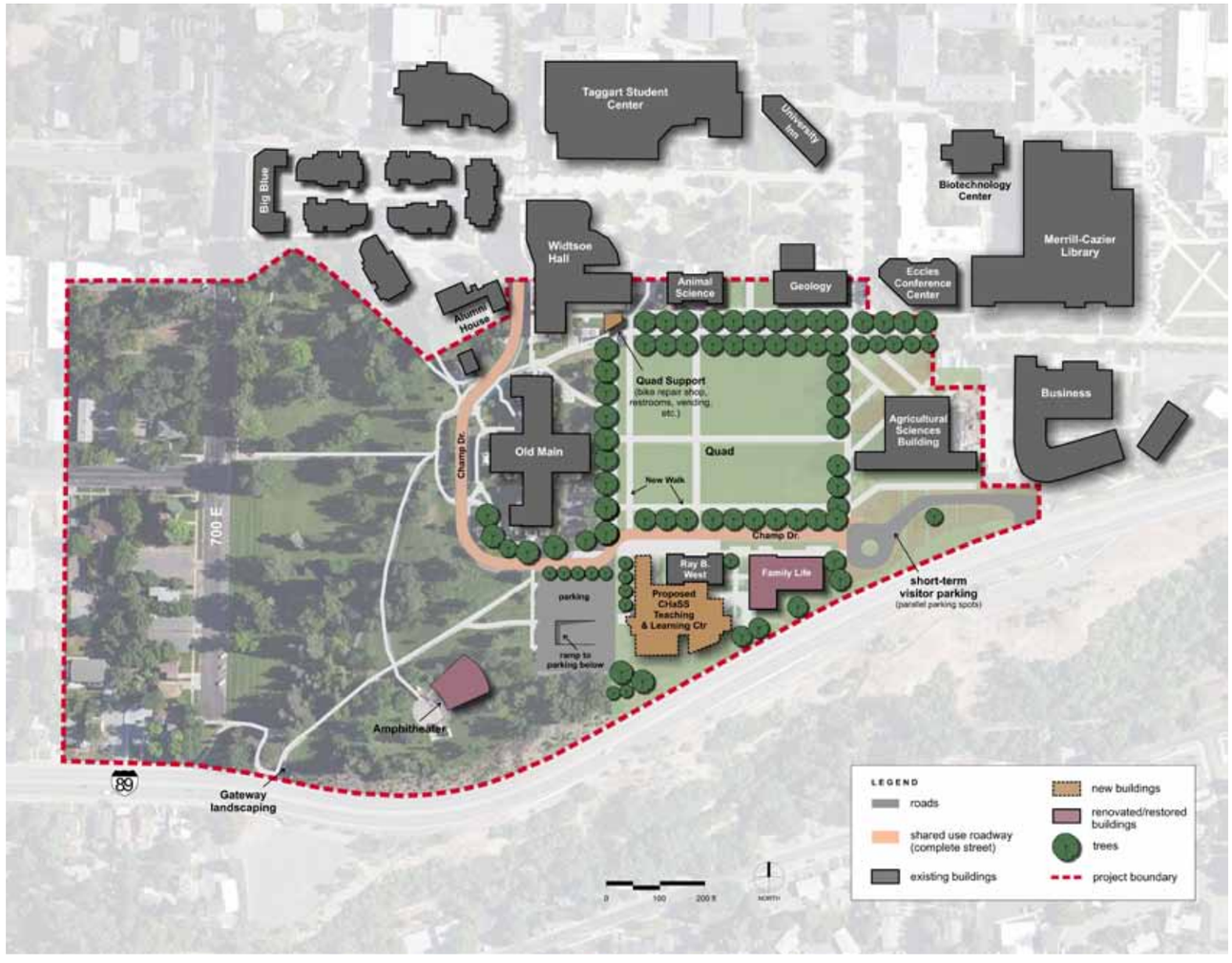
- Permanent structures shall not be placed on the Quad fields
- Additional walks across the center of the Quad are not recommended to preserve recreational spaces.
- Additional walks on the edges of the Quad may be considered to support increased circulation needs. Coordinate new walks with the Quad Tree Replacement Plan.
- An additional walk on the west side of the Quad is recommended if it does not negatively affect recreational use.
- An additional walk on the south side, in conjunction with the re-imagining of Champ Drive, is recommended if it does not negatively affect recreational use.

04.2 DISTRICT PHASING PLANS

For the purposes of this study, the design team was asked to provide a full-build out district plan, as well as several phasing plans to suggest how the long-term goals could be reached in orderly fashion. To that end, three phasing plans have been developed: short term (0-10 years); mid term (10-20 years) and long term (20+ years). The key proposals for each of the phases are described in text narrative and graphic depiction in the next several pages.

0 - 10 Year Phase Key Components

- Framework in place for potential accommodation of CHaSS Teaching and Learning Center (TLC) or some other structure at SW Corner of the Quad district adjacent to Ray B. West. Conversion of the existing surface parking lot to structured parking to accommodate similar levels parking for faculty.
- Removal of the existing link between Ray B. West and Family Life buildings, creating the need for renovation of the Family Life building to install air-conditioning, meet seismic requirements and accommodate ADA accessibility requirements.
- Conversion of Champ Drive to shared use roadway or woonerf to accommodate pedestrians, cyclists and motorists, with legal preference given to cyclists and pedestrians rather than private automobiles. Includes creation of a new sidewalk on south edge of Quad lawn to meet existing foot traffic needs.
- Renovation of the existing amphitheater on Old Main hill.
- Creation of a Quad support building in NW corner of the Quad to provide restrooms, a bike repair station, and vending to help support further active use of the Quad.



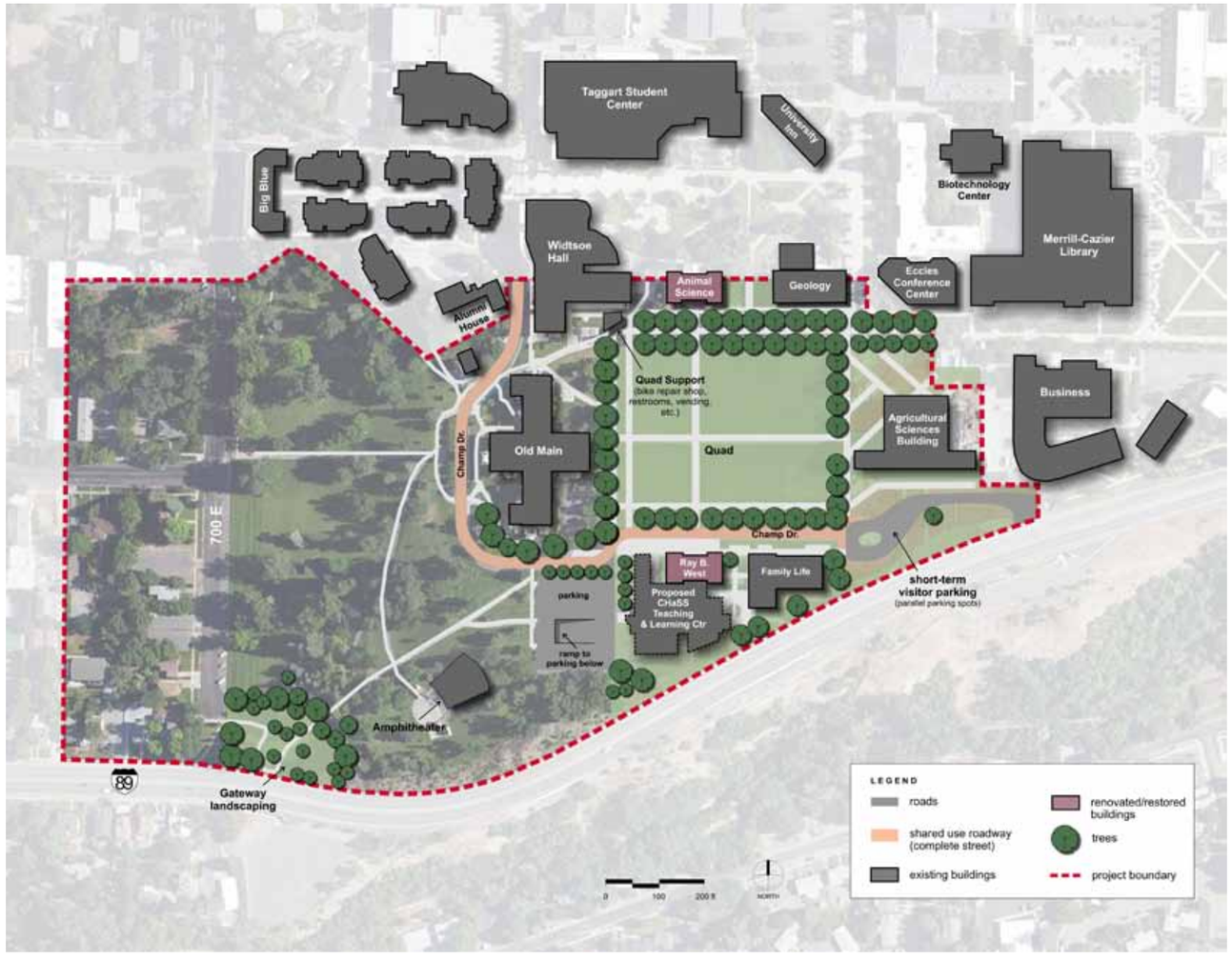
Proposed Quad District 0 - 10 years phasing plan

10 - 20 Year Phase Key Components

- Renovation of Animal Science and Ray B. West Buildings to upgrade interiors, meet seismic requirements and install air-conditioning in Animal Science Building.
- Expansion of existing turnaround adjacent to Agricultural Sciences Building to accommodate short term visitor parking with parallel parking stalls.
- Creation and improvement of campus gateway landscaping at the intersection of 700 East and Highway 89.
- Establish two new paths in the Quad to accommodate foot traffic along the south and west sides of the Quad. These new pathways would also accommodate deliveries and include power outlets to support events.

Full Build-Out / 20+ Years Key Components

- Restoration and expansion/addition to Geology Building to continue accommodating Geology (unless relocated elsewhere in earlier phases) and additional instruction space in a range of sizes. This site provides an opportunity to create a physical and visual connection between the Quad District, the Student Center and the promenade that continues north from the Quad.
- Investigate potential for future development of classroom, departmental or other necessary spaces on the University-owned property west of 700 East.



Proposed Quad District 10 - 20 years phasing plan

04.2 DISTRICT PHASING PLANS

Full Build-Out / 20+ Years Key Components

- Restoration and expansion/addition to Geology Building to continue accommodating Geology (unless relocated elsewhere in earlier phases) and additional instruction space in a range of sizes. This site provides an opportunity to create a physical and visual connection between the Quad District the Student Center and the promenade that continues north from the Quad.
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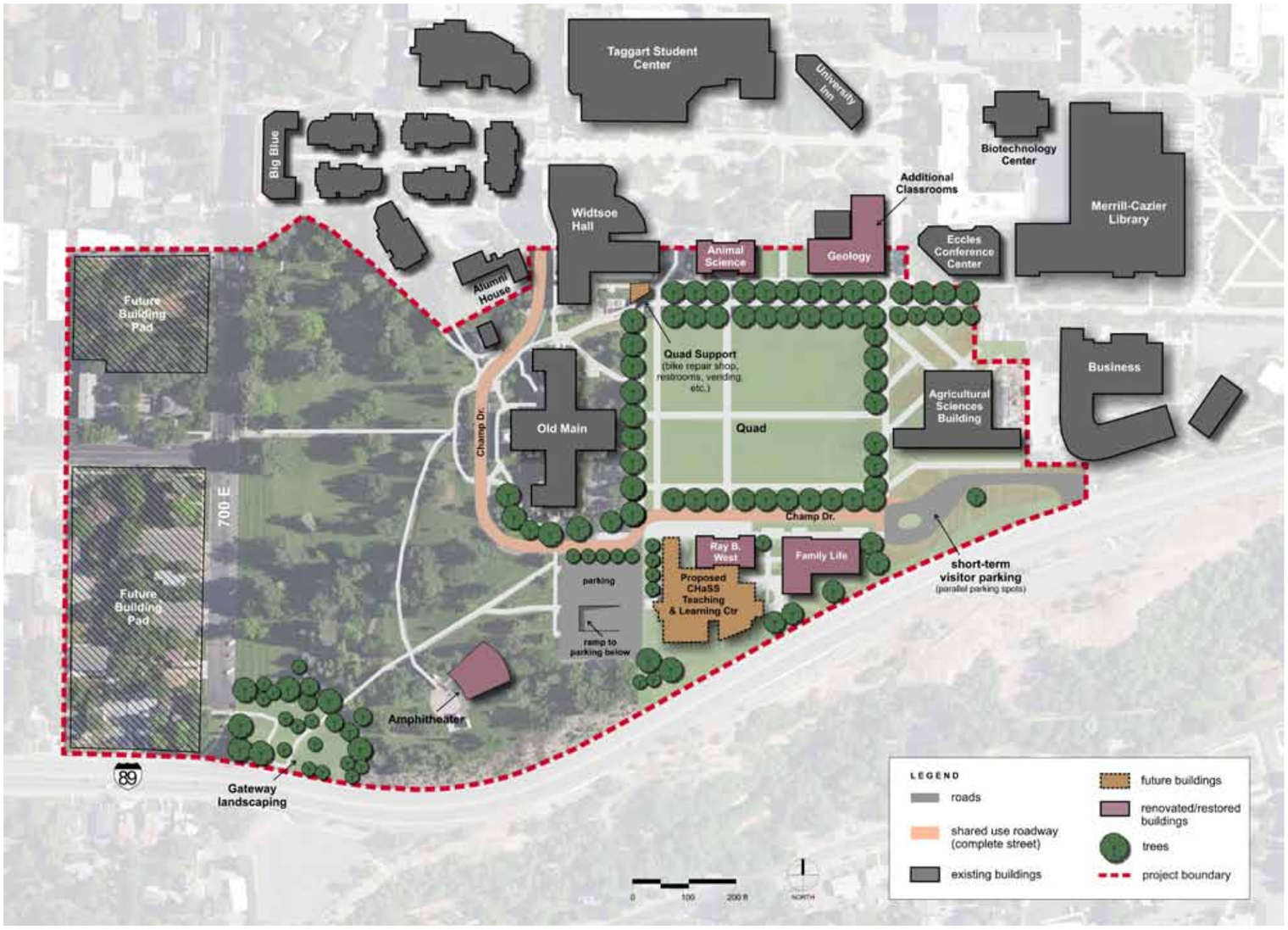


Proposed Quad District full build-out plan (20+ years)

04.3 PROPOSED SPACE UTILIZATION

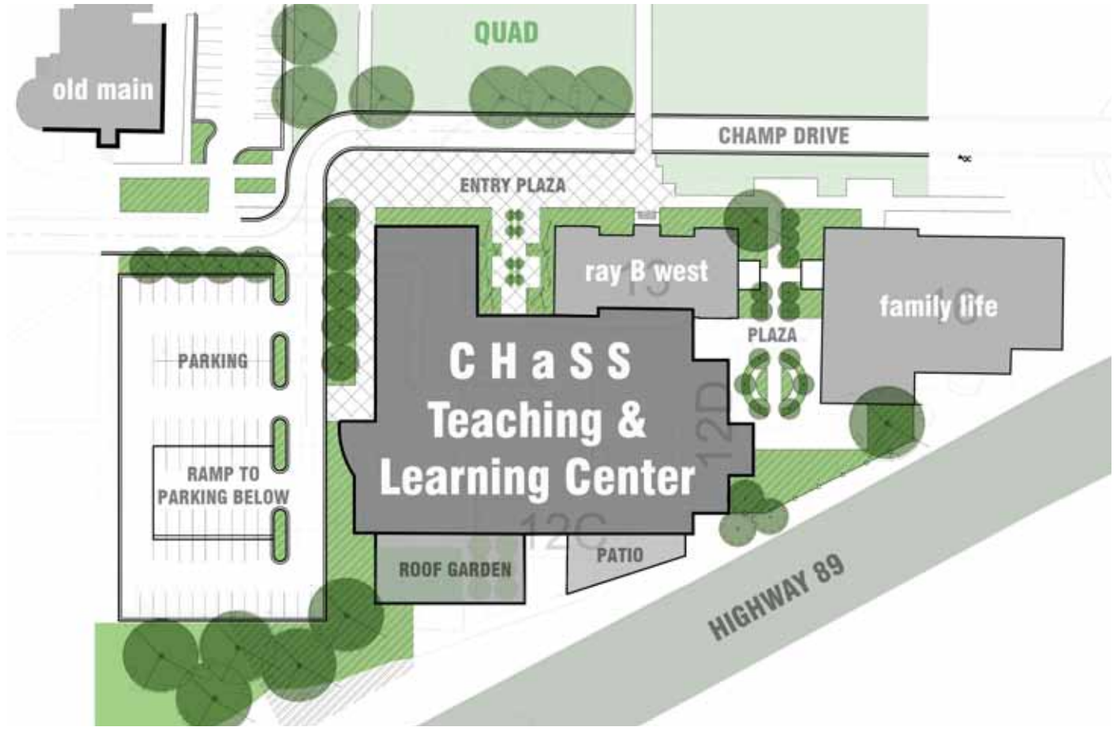
Space planning changes within the Quad District primarily fall in response to three broad categories:

- The desire to build new facilities within the Quad District,
- Long range building projects to accommodate colleges elsewhere on campus, and
- Internal departmental spaces needs to accommodate growth within remaining departments in the Quad District.

There is only one new building project anticipated for the Quad District. The construction of the 127,000 s.f. College of Humanities and Social Sciences (CHaSS)Teaching and Learning Center (TLC) will occur within the next decade. The proposed building site, illustrated to the right, indicates a potential footprint for this new facility located south and west of the Ray B. West Building and the Family Life Building. This potential siting will result in the demolition of the two smallest buildings within the precinct, the Gun Shed and Lundberg Hall (total of 7,959 s.f.). Space impacts include the need to replace the outdoor play area and indoor receiving space for the Child Development Lab, interior design studios, and space to accommodate any remaining Nursing offices. The College of the Arts would eventually like to accommodate the Interior Design program in the Fine Arts District, but that funding has not yet been identified.

Future new facilities planned for the USU campus include the College of Education Clinical Research Building, College of Science Biological Sciences Building, and the previously mentioned Fine Arts District. The impacts these building projects may have on the Quad District should be planned for in coordination with the growth and development across the USU campus.

- The CHaSS TLC will predicate the review of the future location of the Child Development Lab (currently 6,268 s.f. in Family Life, 1,560 s.f. in Gun Shed and significant outdoor space to the south of R.B. West). If this facility moves, there would be an opportunity to improve many aspects of the program, optimizing lab and administrative space, vehicle drop off and pick up areas, and a new outdoor play area that meets the requirements for licensure. One potential location which was discussed is at the base of Old Main Hill on University-owned property. See Section 6.6 of the Appendix for additional information.



Site plan for the proposed CHaSS Teaching & Learning Center

- If the College of Arts is successful in expanding, there may be an opportunity to consolidate programs currently housed in the Quad District in the Fine Arts District. If space where available elsewhere to accommodate the Interior Design program, space currently utilized in the Family Life Building, Lundberg Building and Gun Shed, could become available for other program areas. Approximately 6,200 s.f. of space may be available in the Family Life Building if or when the Fine Arts District is able to accommodate other program areas in renovated or expanded facilities.
- College of Engineering's planned facility is anticipated, in the next 5 to 10 years, ans may be able to accommodate the Computer Science Department, potentially freeing space within Old Main and Eccles Science Learning Center. Approximately 11,000 s.f. may then be available in Old Main Level 3.

04.3

PROPOSED SPACE UTILIZATION

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No.	*Building Name*	*Potentially Available Space*	net
1	**Old Main**	Adminstration	
		College of Humanities and Social Science	3,618
		College of Engineering	11,091
		University Scheduled Classrooms	
16	**Family Life**	College of Arts	5,538
		College of Agriculture & Applied Sciences	
		College of Education	7,396
		College of Humanities and Social Science	
		University Scheduled Classrooms	
18	**Geology**	College of Humanities and Social Science	920
		College of Education	1,995
		College of Science	
		University Scheduled Classrooms	
21B	**Eccles Science Learning Center**	College of Engineering	2,231
		College of Science	
		University Scheduled Classrooms	

- College of Engineering's planned facility is anticipated, in the next 5 to 10 years, ans may be able to accommodate the Computer Science Department, potentially freeing space within Old Main and Eccles Science Learning Center. Approximately 11,000 s.f. may then be available in Old Main Level 3.
- Approximately 3,000 sf of space now accommodates the Nursing program in Lundberg Hall and Geology. Accommodation closer to the College of Education would be desirable.

On a much smaller scale, colleges, departments and administrative program areas will continue to expand and contract and space needs may be able to be planned more easily. While all future space needs are not known at this point, the following is anticipated:

- Administrative space needs include accommodating administrative staff from the existing East Campus Office Building to Old Main.
- Consolidation and expansion of administrative space needs in Old Main.
- Growth within the CHaSS may mean that space opened by the construction of the Teaching and Learning Center will be backfilled by other program areas. At this point it is anticipated the 3,800 s.f. space will be available within Old Main for other non-departmental purposes once the Teaching and Learning Center is constructed.

04.3 PROPOSED SPACE UTILIZATION

It is clear that the construction of new facilities on campus will have a direct impact on space utilization within the Quad District. It appears that the construction of these facilities may free up space in a number of buildings. USU Space Planning should be aware of the need to create synergies for programs as space shifts occur on campus when new buildings are added or space becomes opened up for other reasons.
The adjacent chart defines the colleges which may make space available in a Quad District facility within the next few decades.

Recommendations

Consolidation of College and Department functions was highly noted as one way to increase efficiency and collaboration. There are a few programs that have found a home within the Quad District that may be better served if they were in similarly appointed space in closer adjacency to their college. These programs include Nursing, Computer Science, and Interior Design.

There are program areas which may be so highly impacted by the construction of the College of Humanities and Social Science Teaching and Learning Center that they may be better served in new homes. These include Interior Design, Nursing and the Child Development Lab. Program space needs have been assessed for Nursing and the Child Development Lab, so that appropriate space can be found prior to the construction of the CHaSS Teaching and Learning Center. Nursing may be accommodated in closer proximity to the College of Education and the Child Development Lab may be best served in a new location outside of the Quad District. (Please reference Appendix 6.5 for more detail)

USU is currently reviewing academic instruction space utilization through a Utah System of Higher Education (USHE) self-study report. Primary data is being provided by the Registrar's Office and Departments. Internal review of these numbers will be helpful, as the planning team was unable to acquire consistent data on day-to-day space utilization of departmentally-controlled space within the District.

It was noted in planning meetings that a central scheduling software that could be utilized by central and departmental scheduling staff would soon be implemented. This will provide the campus with the ability to provide some oversight to the utilization of space within the Quad District that does not currently exist.
All colleges and departments felt that steady growth would continue within their programs. With this said, there will not be room to accommodate all of the potential demand for space within the Quad District. The four new building projects, COE Clinical Services Building, COS Biological Science Building, CHaSS Teaching and Learning Center, COE Engineering Building, and the development of a College of Arts District may be able to take a significant burden off of the Quad District, allowing internal growth and continued departmental backfilling of space. If all of the planned construction were to occur and existing programs moved out of Old Main, Family Life, Geology and Eccles Science Learning Center, approximately 33,500 s.f. may be available for growth, new initiatives and much needed general academic instruction space.

Existing Conditions

The purpose of this section is to describe the existing conditions and recommendations along Champ Drive with special attention to observations of drop-off/pick-up at the Child Development Lab (CDL), sight distance issues, and parking occupancy. These observations will inform the planning process of the Quad District. Figure 1 (in appendix) illustrates crosswalk locations and roadway speed limits. All figures are located at the end of the memorandum.

Child Development Lab Observations

The CDL was observed in the morning drop-off period and the late morning pick-up period on Thursday, September 12, 2013. The morning drop-off period lasts from approximately 8:10 am to 8:51 am and the late morning pick-up period lasts from approximately 10:35 am to 11:18 am. During these two observation periods, number of vehicles, dwell times, and queue length were collected. Conditions are shown in Figure 2 (in Appendix).

The morning drop-off period consisted of 38 vehicles. Although the first vehicle arrives for drop-off at 8:10 am, the first vehicle does not leave until 8:30 am. At this point, the queue of vehicles is at its morning maximum with 11 vehicles. With a queue of 11 vehicles, two vehicles are queued on Champ Drive. This requires vehicles to travel in the opposing lane to pass queued vehicles. Queuing on Champ Drive was observed for five minutes. Generally, unloading occurs three vehicles at a time. A small sample of dwell times were collected at the unloading location. The average dwell time in the morning drop-off period is 33 seconds.

The late morning pick-up period consisted of 40 vehicles. Although the first vehicle arrives for pick-up at 10:35 am, pick-up does not begin until 10:40 am. The late morning maximum queue is 14 vehicles. With a queue of 14 vehicles, three vehicles are queued on Champ Drive. This requires vehicles to travel in the opposing lane to pass queued vehicles. Queuing on Champ Drive was observed for ten minutes. Generally, loading occurs two to three vehicles at a time. A small sample of dwell times were collected at the loading location. The average dwell time in the late morning pick-up period is 80 seconds. Some parents were observed walking their children to/from the Lab site from other parking locations.

Child Development Lab drop-off queue

Child Development Lab drop-off / pick-up area

Sight Distance

Sight distance was observed at the intersection of Champ Drive and US-89. Sight distance to the west was observed at 475 feet, limited by a vertical curve in the roadway. Sight distance to the east was observed at 700+ feet, limited by a horizontal curve in the roadway. Based on standards from the American Association of State Highway and Transportation Officials (AASHTO), intersection sight distance for a left-turn from a minor approach on 40 mph road (US-89) is 445 feet. For a right turn, sight distance should be 385 feet. Based on this, sight distance is adequate in both directions.

Parking

Parking lot occupancy was collected at 9:00 am, 11:00 am, and 3:45 pm. There are approximately 212 spaces, including handicap, reserved, and metered stalls. At 9:00 am, parking was at 62% occupied (131 spaces). There were 74 vacant general use stalls, four vacant handicap stalls, two vacant reserved stalls, and one vacant metered stall. At 11:00 am, parking was at 77% occupied (163 spaces). There were 38 vacant general use stalls, five vacant handicap stalls, four vacant reserved stalls, and two vacant metered stalls. At 3:45 pm, parking was at 66% occupied (140 spaces). There were 61 vacant general use stalls, five vacant handicap stalls, four vacant reserved stalls, and two vacant metered stalls. Parking usage is shown in Figure 3 (in appendix).

Traffic and Pedestrian Conditions

Traffic volumes at the Champ Drive / Parking lot intersection and Champ Drive / US-89 intersection were collected from 3:30 PM to 5:15 PM on October 16, 2013. Pedestrian volumes were also collected at this same time at the crosswalks near the Champ Drive / Parking lot intersection. Figure 4 (in appendix) shows the resulting peak hour volumes at the respective locations. Although the pedestrian volumes are fairly high on Champ Drive, the resulting maximum vehicular queue due to the pedestrian crossings was observed at two vehicles, or approximately 50 feet.

Analysis Methodology

Level of Service (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and F the worst. Table 1 provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for both signalized and unsignalized intersections. The Highway Capacity Manual 2010 (HCM 2010) methodology was used in this study to remain consistent with "state-of-the-practice" professional standards. This methodology has different quantitative evaluations for signalized and unsignalized intersections. For signalized intersections, the LOS is provided for the overall intersection (weighted average of all approach delays). For unsignalized intersections, LOS is reported based on worst movement. LOS A-D is considered acceptable conditions.

TABLE 1 LEVEL OF SERVICE DESCRIPTIONS

LOS	Description	Signalized Intersections	Unsignalized Intersections
		Avg. Delay (sec/veh)[1]	Avg. Delay (sec/veh)[2]
A	*Free Flow / Insignificant Delay* Extremely favorable progression. Individual users are virtually unaffected by others in the traffic stream.	< 10.0	< 10.0
B	*Stable Operations / Minimum Delays* Good progression. The presence of other users in the traffic stream becomes noticeable.	> 10.0 to 20.0	> 10.0 to 15.0
C	*Stable Operations / Acceptable Delays* Fair progression. The operation of individual users is affected by interactions with others in the traffic stream	> 20.0 to 35.0	> 15.0 to 25.0
D	*Approaching Unstable Flows / Tolerable Delays* Marginal progression. Operating conditions are noticeably more constrained.	> 35.0 to 55.0	> 25.0 to 35.0
E	*Unstable Operations / Significant Delays Can Occur* Poor progression. Operating conditions are at or near capacity.	> 55.0 to 80.0	> 35.0 to 50.0
F	*Forced, Unpredictable Flows / Excessive Delays* Unacceptable progression with forced or breakdown of operating conditions.	> 80.0	> 50.0

Table 1 decribes level of service (LOS)

1. Overall intersection LOS and average delay (seconds/vehicle) for all approaches.
2. Worst approach LOS and delay (seconds/vehicle) only.
3. Volume to capacity (v/c) rate, average values.
   Source: Fehr & Peers descriptions, based on 2010 Highway Capacity Manual.

Traffic Analysis

Traffic analysis was performed at the two study intersections using Synchro software. The analysis shows that Champ Drive/Parking Lot operates at a level of service (LOS) A and Champ Drive/US-89 operates at a LOS A overall and LOS D at the worst approach (Southbound left-turn) with an average delay of 30 seconds per vehicle for that movement. See section 6.4 in the Appendix for further details on traffic analysis.

Recommendations

The potential recommendations have been segregated into the following phases:

- 0-10 Year Plan (assumes CDL is present, no new building, no new parking garage)
- 10-20 Year Plan (assumes new building, new parking garage, and no CDL)
- 20+ Year Plan (assumes the 15 year conditions, plus a Woonerf on Champ Drive)

5 Year Recommendations

Figure 5 (in Appendix) shows the potential recommendations to consider within the next five years. The first priority is to mitigate the CDL pick-up and drop-off operations so that standing queues are eliminated from Champ Drive. The least impactful alternative to existing infrastructure is to implement staggered pick-up/drop-off times so that the arrival/departure of vehicles occurs over time and not all within a 20 minute time frame which results in the congestion and extensive queues. If staggering the schedule not feasible then an alternative circulation pattern for the pick-up/drop-off as shown in Figure 5 (in Appendix) could be implemented. Having the two side-by-side lanes in the CDL area will double the queuing on-site. A disadvantage to this alternative is that approximately 21 spaces would be lost. However, the data collection shows that the existing parking lot has 49 or more vacant spaces throughout the day that could compensate for these lost spaces.

Although not needed from a traffic operational standpoint, the intersection of Champ Drive/Parking Lot could be changed from a stop-controlled intersection to a roundabout. Since this is not needed to fix existing traffic operation issues, this is a "soft" recommendation and is stated for consideration only. If the queuing issue at CDL is not mitigated, then a roundabout will not work at this location. A roundabout is not recommended in the full build-out (20+ year) plan with a Woonerf implemented on Champ Drive, but it is an alternative that efficiently serves traffic at this intersection.

10-20 and 20+ Year Recommendations

Figure 6 (in Appendix) shows the potential recommendations to consider within the next 10 to 20+ years. The traffic volumes at Champ Drive/US-89 currently don't warrant a traffic signal and the sight distance was evaluated to be adequate. However, if traffic volumes increase on Champ Drive due to the new parking garage and/or other factors, then when/if warranted (based on traffic volumes), a Hi-T intersection at Champ Drive/US-89 is recommended over a traditional signalized intersection. A Hi-T intersection allows the eastbound through movement on US-89 to continually flow without being stopped by the signal. This reduces the delay on at the intersection on US-89 that would otherwise be higher with a traditional signalized intersection.

A security gate on Champ Drive on the west side of the transit drop-off area is recommended. This location is recommended so that those without access to the gate have an area to turnaround. This will allow access only to card holders and will reduce the amount of visitors and passenger drop-offs that currently use Champ Drive, thus reducing the amount of traffic on Champ Drive. This will help shift the Quad, and more specifically Champ Drive, into a more pedestrian and bicycle friendly and focused area which is ideal for the campus environment.

The drop-off area and transit stop near the Agricultural Sciences building was not evaluated or observed in detail; however, it appears it functions adequately. If the number of shuttles increase due to increased headways or the addition of new routes, then this area should be evaluated in more detail to verify it still functions well. Ideally vehicular drop-offs and transit loading zones should be segregated as well as possible. If a security gate is installed on Champ Drive, this area should be analyzed in greater detail.

04.4 DISTRICT TRANSPORTATION

Intersection of Champ Drive and highway 89

Parking gate

Sight distance of right-turning vehicles

Sight distance of left-turning vehicles

04.5 DISTRICT UTILITIES

The following sections outline the utility analysis for the Utah State University Quad District Plan. The scope of the study is outlined on the existing utility maps, which generally includes all areas from the west side of Old Main Hill to the east side of the Agricultural Sciences Building and from Highway 89 on the south to the north side of the Animal Sciences/Geology Buildings. No field survey data was collected to determine sewer system, water system, irrigation system or storm drain system elevations due to a limited scope and budget. This analysis is based upon available utility data from Utah State University combined with input from Facilities staff members. The scope of this study is to collect an inventory of existing utilities and identify potential red flag issues associated with each utility.

Utility Inventory

The existing utility data was collected for water, sewer, gas, storm drain, irrigation, steam, chilled water, communications, and power. The data was provided by Utah State University facilities department combined with ground truthing efforts to adequately and accurately depict the utilities within the Quad District Plan.

The information was compiled in individual utility maps for water, sewer, storm drain, irrigation and a general utilities. The orange outline shown on each map illustrates the study boundary of this analysis. The bottom of each of the maps contains a legend detailing the different key components of the maps such as line sizes, manholes, fire hydrants, storm drain boxes, gas meters. The maps can be found in section 6.5 of the Appendix of this plan beginning on page 70.

Existing Utility Analysis

Water

The Quad District is currently served by adequate water mains on all sides of the Quad and surrounding buildings. A fire flow and peak demand analysis is not part of the scope of this analysis. An existing 10-inch water main runs along the east and south sides of the Quad with an 8-inch main along the west side of the Quad. The 8-inch and 10-inch water mains on the west and east side, respectively continue to the north and are connected together to the north of the Animal Science and Geology buildings to form a water main loop for the Quad District area. There is a smaller loop around the Old Main Building with a 6-inch main and the 8-inch main on the west side of the Quad. See the Water Map on page 74 of the Appendix.

USU Facilities provided existing fire hydrant pressure and flow data. Fire hydrants number 1, 2, 3, 4, 5, 8, 10 and 11 are within the Quad District Plan area. These hydrants have a static pressure ranging from 79-82 psi, a residual pressure 62-73 psi, observed flow of 1,202-1,453 gpm, and available flow of 3,408-5,129 gpm. The existing water pressure and flow is adequate to provide service to the existing and proposed buildings. A summary of the fire hydrant data along with a map showing the locations of the hydrants can be found on page 75.

There are no recommendations at this time for water system improvements.

Sewer

The existing sewer system within the study area consists of 4-inch to 12-inch sewer mains. There are two main sewer trunk mains flowing from east to west. Trunk line one flows along the north side of the Quad as a 10-inch sewer main and changes to a 12-inch sewer main near Old Main Hill and continues west to 700 East Street. The USU Facilities staff said this main was installed recently and is in relatively good condition. The other sewer trunk main flows along the south side of the Quad as an 8-inch main, which is reduced to a 6-inch main. This 6-inch main continues west through Old Main Hill to 700 East street.

The 8-inch main was installed recently, which is in good condition. The 6-inch main is undersized to serve the buildings on the south side of the Quad District area, especially with the master planned CHaSS building in the southwest corner of the Quad. It is recommended that the equivalent residential connections (ERC) for the service area of this sewer main be determined to size the proposed sewer main replacement. It is estimated that the sewer main replacement would be a 10 to 12-inch sewer main. The main will need to be replaced from the end of the existing 8-inch main to the connection at the Logan City sewer system. See the Sewer Map on page 72 for details.

04.5 DISTRICT UTILITIES

Storm Drain

The storm drain system with the Quad District Plan consists of individual, isolated collection systems for each building area. None of the storm drain collection systems are interconnected. Each system utilizes a sump or series of sumps. It is recommended that future storm drain systems and projects utilize the same approach for storm water collection and disposal. See the Storm Drain map on page 72 in the Appendix of this plan.

Secondary Irrigation

The Quad District area is serviced by a looped pressurized irrigation system that varies in size from 4 to 12-inch mains. This analysis didn't inventory or analyze the irrigation laterals. Jim Huppi from the USU Facilities office stated that this area has adequate pressurized irrigation supply and did not recommend any improvements to the system considering the current uses and the proposed CHaSS building. The irrigated area within the Quad District area is almost at build out considering that the CHaSS building will be built within an existing parking lot located near the Ray B. West and Family Life Buildings.

As water conservation measures are implemented according to the University's sustainability guidelines, the amount of water usage within the Quad District area will likely be reduced. See the Irrigation Map on page 71 of the Appendix for details.

General Utilities

The general utilities map for the Quad District Plan shows power, communication mains, steam and chilled water. There are adequate electrical and communication lines within the Quad district area. Currently the Agricultural Sciences Building is serviced by chilled water and steam from the adjacent utility tunnel that ends near the northeast corner of the Quad. Direct bury steam and chilled water mains exist along the north side of the Quad to an existing utility tunnel that runs along the west and south side of the Quad. Old Main Building, Family Life and Ray B. West Buildings are serviced with chilled water and steam from that existing utility tunnel. The utility tunnel on the west side of the Quad continues northwest to the existing housing units northwest of the Old Main Building.

Utility Recommendations

After analyzing the existing utility inventory and collecting input from USU Facilities staff the following items are recommended at this time:

- A new utility tunnel (651 lineal feet) needs to be installed to connect the existing utility tunnel that terminates at the northeast corner of the Quad and the existing utility tunnel on the south side of the Quad per the USU Facilities staff recommendations. This tunnel would include steam, chilled water and communication lines.
- The existing utility tunnel on the south and west side of the Quad is not adequate and needs to be renovated to current utility tunnel standards per USU Facilities staff recommendations.
- No vents for the utility tunnels shall be installed on the Quad.
- Install spider box outlets on the south side of the Quad for event power access.
- It is recommended that the equivalent residential connections (ERC) for the service area of this sewer main be determined to size the proposed sewer main replacement. It is estimated that the sewer main replacement would be a 10 to 12-inch sewer main. The main will need to be replaced from the end of the existing 8-inch main to the connection at the Logan City sewer system. See the sewer map on page 72 for details.

05 DISTRICT ARCHITECTURE & DESIGN GUIDELINES

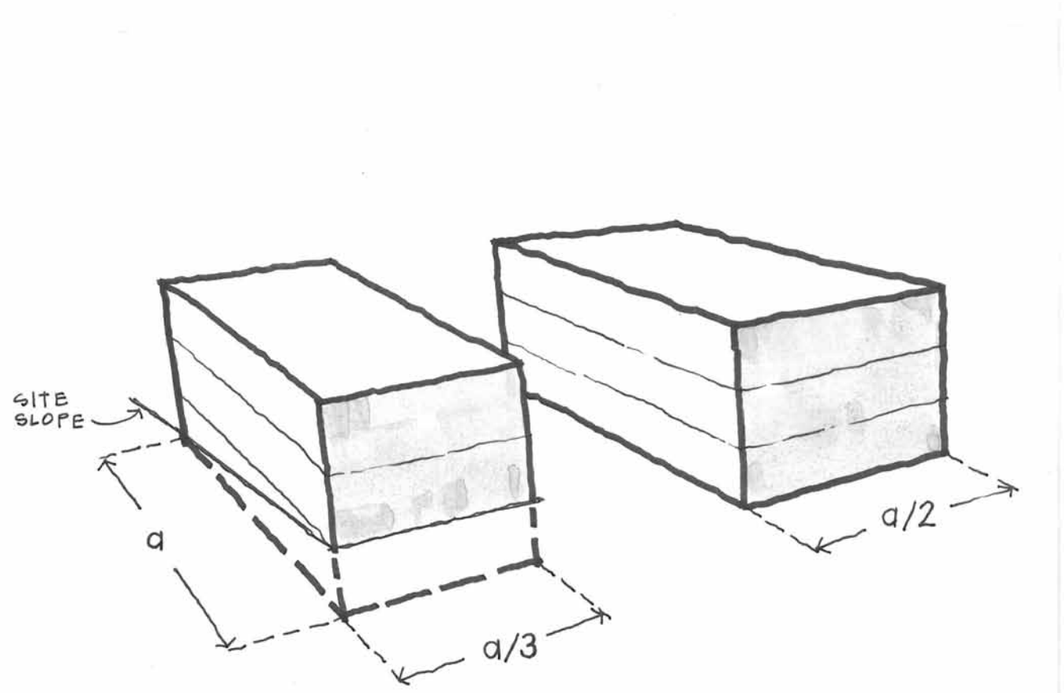
05.1 ARCHITECTURAL DESIGN GUIDELINES

The architectural guidelines for the Quad District are intended to provide a framework for any potential new buildings, additions to existing structures, and the renovation/restoration of historic buildings. Guidelines are intended to facilitate an approach to the range of development options and provide a foundation for architectural dialogue regarding development. These guidelines will function as a tool for design on the Quad District and shall enforce major design concepts with the objective of continuing the social and physical cultures of the Quad.

Guidelines for institutions can range from highly prescriptive (specific stylistic requirements and building materials) to visionary (general expressions of purpose or intent). Given the prominent nature of the Quad as the heart of the USU campus, these guidelines consider elements that encompass the entire range. The broader purpose of the Quad's function is considered alongside compatibility with the historic styles and materials of the buildings that frame this iconic space. The Quad needs to be perceived as a unified element within the academic core of the campus, but also needs to consider how it relates to adjacent spaces and structures. For example, while the overarching qualities and elements of the buildings are to be focused on the Quad, secondary elevations should be considered as active facades as well, with considerations to entrances, details, and circulation of the broader academic core.

The design guidelines are comprised of the following elements:

- Solid to Void
- Massing / Form
- Orientation/Façade Articulation
- Building Height / Density
- Vertical Articulation
- Entrances
- Windows / Doors (Fenestration)
- Materials and Details / Building Style
- Function vs. Form



A graphic showing the typical massing and orientation of academic buildings, seen historically on the USU campus and recommended moving forward with construction in the Quad district.

05.1 ARCHITECTURAL DESIGN GUIDELINES

Solid to Void

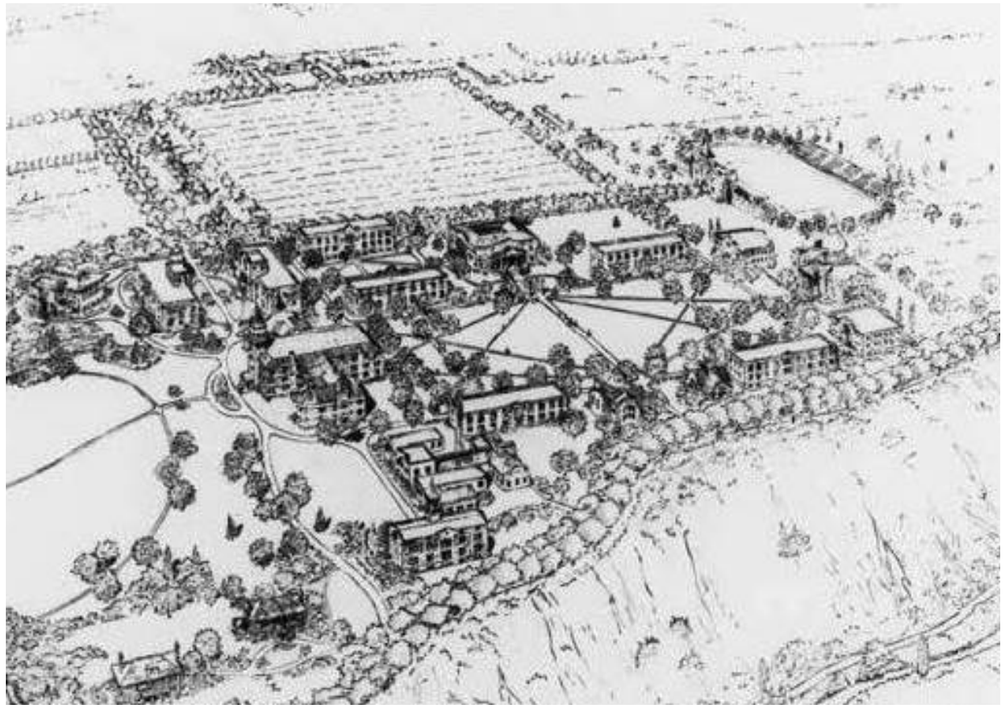
A pattern of solid (buildings) to void (open space) should be maintained and respect the pattern established in the early development of the Quad based on the 1912 Master Plan. Respecting and continuing this pattern offers several advantages:

- This promotes individuality of buildings and maintains a compatible scale for this area. New construction and additions should avoid over-large extensions onto existing structures that interrupt the pattern of solid-to-void historically developed.
- Additionally, providing space between buildings offers opportunities for small, intimate landscaped spaces which offer a contrast to the large, open expanse of the Quad lawn. While additional construction and additions to building can and likely will occur, the large open space (void) of the Quad lawn should be maintained.
- The separation of structures facilitates circulation between the Quad and adjacent areas.
- Voids between buildings also work to maintain viewsheds both into and from various points of the Quad.

Massing/Form

The overall objective for the guidelines in regard to massing and form is to communicate clarity and consistency with the structures that surround the Quad, regardless of the time frame in which they were built. Whether a building was constructed in 1920 or 2020, the massing and form should be compatible with an academic building in a Quadrangle setting.

Massing - Academic classroom and administration buildings are frequently in the range of a:a/3 (see diagram on page 43). This approach reflects the historic nature of massing and scale on the Quad, and consistency is recommended. Unique elements that may enhance new structures, such as large lecture halls or public space, may articulate the massing of buildings provided it does so in a manner that does not overtake the overall massing. Iconic structures or those with specific requirements for deeper floor plates (for instance, recreation facilities) should not be located on the Quad to avoid overpowering the iconic nature of Old Main. A variety of floor plans and building layouts may occur, with an overarching recommendation for relatively narrow floor plates for most building types.



Bird's eye rendering of the 1912 Campus Master Plan; solid-to-void of buildings in relation to each other and the expanse of the Quad lawn are established.

Roofing - The roof is an area of the building that can contribute to the character of the structure though its form. Expressive roof forms can be an important consideration for the architectural character of the Quad. Additionally, the roof is an area that can contribute to a building's sustainability by influencing storm water management and vegetation.

Sloped roofs - Blue roof strategies should be considered for sloped roofs as a means to collect and store rainfall on site for use, such as irrigation and gray water use.

Low-slope/flat roofs: Green roof approaches may be more appropriate as a mechanism for minimizing roof runoff through evaporate-transpiration and improving water quality.

Orientation / Facade Articulation

Orientation – the primary orientation of the buildings is to have the long face of the building fronting the Quad, with an orientation enhancing the grid of buildings and open space. Secondary aspects of the buildings may be oriented to facilitate capturing daylight and views, active solar, and renewable energy opportunities.

Horizontal Articulation – Buildings following the height and massing recommendations will predominantly be horizontal. However, vertical articulation is needed to avoid long, repetitive facades with a lack of visual interest. Entries should be well-articulated and are the perfect opportunity to interrupt horizontal compositions. These should range in width from one to two structural bays (20 to 40 feet) to maintain a sense of verticality to contrast with the horizontal composition of the building.

Maintaining connections with other parts of campus – While the buildings surrounding the Quad all should continue to primarily address this iconic open space, attention needs to be given to the way in which these structures address surrounding areas, buildings, and proximate uses. Entrances and façade articulation on multiple elevations need to be considered in an academic setting where the primary access to these structures is on foot by student users coming from multiple origins (as opposed to users only entering the building off a parking lot, or single sidewalk). This is a critical component that is often overlooked in more modern academic structures, despite the continued pedestrian-oriented use of campuses.

Height/Density

The pattern and density of structures within the Quad District should be compatible with the scale and character of the existing buildings and support the image of the Quad as the historic heart of campus and the academic core.

The overall Campus Master Plan recommends building height of three to four stories, with the intention of increasing density and making efficient use of land resources beyond what single-story buildings offer, yet also keeping buildings at a human scale. Currently, the majority of buildings on the Quad are three stories in height and future buildings should respect and not overwhelm their presence. Scale in the built environment is a function of both size and articulation. A vertical organization is recommended.

Vertical Articulation

An articulated ground floor is important for buildings on the Quad, as it reinforces the building's connection to the open space of the lawn which it fronts. The design of the lowest level of the building is the opportunity to mediate between the scale of the building itself and the pedestrian scale of the pedestrian pathways and open spaces adjacent to the building. An interaction between the use of architectural features on the building and the landscape features or plantings will enhance the pedestrian scale appropriate for an academic campus. The differentiation of base/middle/top is not a strict pattern of composition, but rather acknowledges the organization of traditional civic and academic buildings and the expectation for materials and components that are vertically articulated in order to create visual interest and express architectural concepts.

- Base – the lowest portion of the building (often the ground level, but sometimes the first two). This is where the building meets the surrounding grade and shapes the pedestrian experience. This level needs to have the most articulation and response to the pedestrian user. Consideration should be given to a high degree of transparency that allows an interaction between the building and the public or campus community space on the outside. A higher level of detail and finish materials is suggested.
- Middle – The body of the building. This portion often consists of repetitive pattern of fenestration. The materials within this portion are largely consistent and define the overall material finish of the building.
- Top – The crown of the building. Often on buildings of only 3 to 4 stories, this is defined by details at the roofline, such as cornices or parapets, rather than a complete story/level of the building. However, a change in material can be used to provide an opportunity for reinforcing and/or defining the character of the building.

Stepping back the building massing above the ground level should be considered to allow daylight to reach circulation paths and landscaping.

Entrances

Consideration needs to be given to how people are arriving to buildings on the Quad and from where. This affects the way they want/should enter the building and is important to consider in relation to compatibility with the style / essence of the Quad.

- Primary entrances – Primary building entrances should be located at or near the center of the building and be directly oriented to the Quad. These entrances should be well-articulated with placement, façade treatments, and material details.
- Secondary entrances – As mentioned, while buildings primarily orient to the Quad and primary entrances should orient there, many have a presence/relationship with other adjacent spaces. Secondary entries should also be articulated and easy to visually ascertain from an approaching user. While they should not be articulated to the same degree as the primary façade, they do offer opportunities for contrasting detail, material enhancements, and vertical interruption.

Materials/Details

Masonry is primary material on historic structures – Brick and unit masonry are recommended for the body of the building and for primary facades. To provide coherence with existing, historic structures on the Quad, a range of brick colors and types has been developed. Designers of new structures and/or additions on existing structures shall comply with these requirements. Concrete masonry units (CMU) may be used in the base level of the building or as accents, but should not dominate any single façade or the building as a whole. A maximum of 25% is recommended for the use of CMU in the envelope of any structure. From a sustainability perspective, locally manufactured materials are recommended as a means for reducing the embodied energy associated with shipping materials from out of region.

Accent materials – Architectural pre-cast stone, terra cotta, and wood are natural counterpoints to masonry. These materials are recommended for use at entries and for architectural detailing. As the overall coloring of materials on the Quad has historically been fairly monochromatic, it is recommended that a limited range of color variation is selected for any single accent material or the overall collection of architectural accents.

Building entrances should follow the pattern established by the existing buildings, with prominent, direct access from the Quad.

Function vs. Form

As additions to buildings and updates/upgrades to existing structures are undertaken, consideration should be given in regard to function vs. form. While the primary objective may be to increase the functionality of the building and space, doing so should respect the form (design/features) of the individual building and its history as well as the Quad collectively. Examples of projects that allowed function to overshadow form, which has had an overall negative impact on the character of the Quad are good references:

- The link between the Family Life and Ray B. West Buildings – the objective was to increase the functionality and provide accessibility to the buildings with an elevator and additional space. The location however, was too prominent for the front of the building and used utilitarian materials and a lack of detailing that does not respect and/or enhance the character of the adjacent historic structures.
- The addition on the rear of the Animal Science Building similarly used utilitarian materials and little detailing.

It is also important to consider the function vs. form issue from the other perspective – not allowing the form to overtake a basic need for functionality. An example showcasing this conflict can be seen in the opaque glass doors in the Family Life Building. Without transparency into the space it is challenging for people to know if this is private or public space. Departmental offices serving students and visitors have had to post their own signs ('Please Come In!') to communicate the function of their space as accessible/public.

Also, consideration of exterior character vs. interior character should not be overlooked. While more consideration is often given to the exterior of historic buildings, when a disconnect exists between the character of the exterior and the interior space, it lessens the cultural experience of continuing the historical contributions of the building. The Geology Building is an example of an interior that is nearly devoid of any original character as a result of past remodels and updates. Family Life, by contrast, retains a great deal of character, but some of it may be compromising the effectiveness of current users.

While offering original historic character to the interior of the Family Life Building, the function of the doors into public office space are limited by the opaque glass panes.

05.2 LANDSCAPING & SITE GUIDELINES

Overview

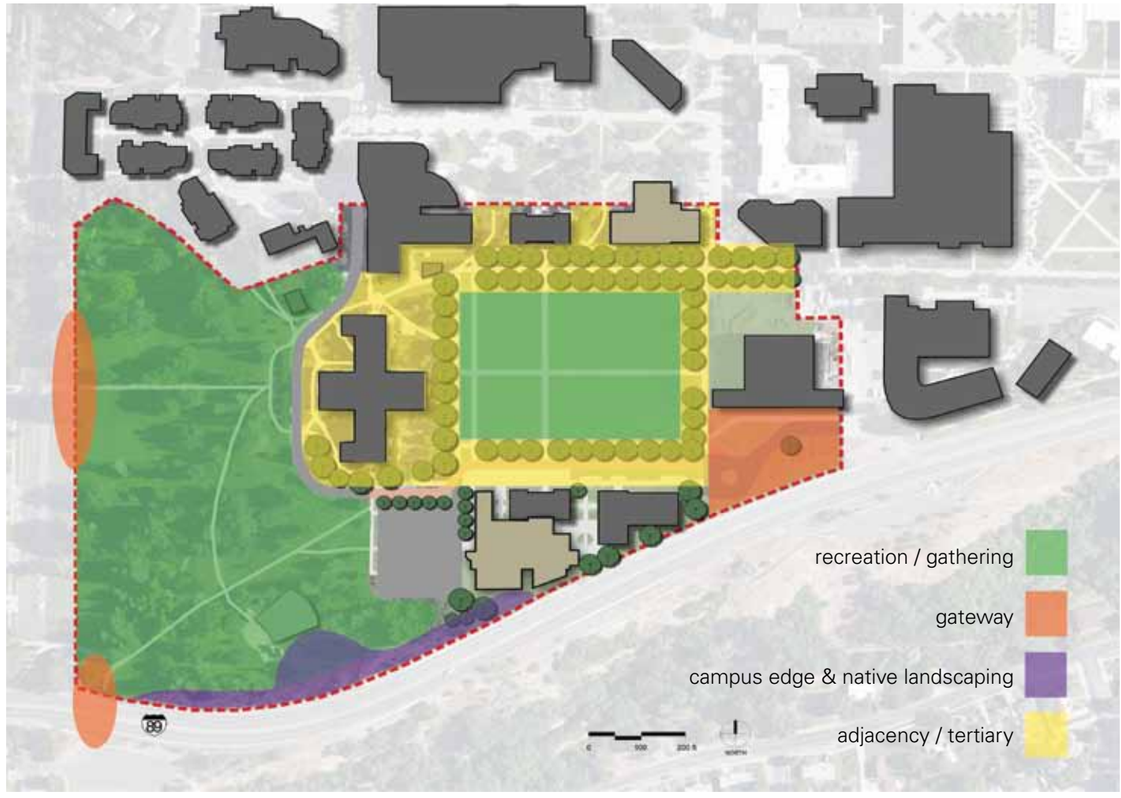
The purpose of the Landscaping & Site Guidelines is to serve as an inventory in providing information about the existing visual condition, characteristics and sensitivity to alteration of areas and travel corridors throughout the study area(s). This section is intended to aid in deciding appropriate land uses, resource development objectives and management prescriptions.

It will delineate, classify and record areas and corridors that are considered to be "visually sensitive and or important," based upon existing landscape conditions that could give rise to concern if their visual appearance were altered by landscape changes.

Four distinct zones have been identified that warrant attention and consideration in strategic and operational planning because of their context and sensitivity to visual alteration:

- Recreation/Gathering
- Adjacency/Tertiary
- Campus Edge and Native Landscapes
- Gateway

The inventory also serves to locate and delineate these areas which might serve as candidates for identification as "historic" areas under University/State requirements and for which campus managers and/or higher level plans may wish to establish visual quality objectives.



Landscape zones map and legend

Recreation/Gathering Zone: Inventory & Recommendations

- Maintain and preserve historic intent, spatial quality and sense of scale of Quad through its use of the singularity and prominent horizontal turf-grass plane.
- Consider a transition to a more water-wise turf-grass that will not alter nor harm the historic intent, look and/or feel, or disrupt the requisite activities necessitated by the Quad space.
- Maintenance and promotion of overall health of vegetation is crucial to the continuance of the iconic dramatic effect of Old Main Hill.
- A well formulated successional planting plan (mindful of both horizontal and vertical structure) should be developed by qualified arborists and/or plant scientists to ensure the long term success of the area.
- Tree plantings in the Quad area to remain consistent with the precedent set forth by the Quad Tree Replacement Master Plan of 2010.

- Turf grass “Quad” serves as a distinctive venue for many social/ cultural/recreational activities, including sports, student gatherings, study, and performances.

- Historic Maple trees on Quad perimeter serve to highlight and anchor space.

- Specimens allow for sense of discovery, personal reflection, and study.

- Site topography and landscape serves as major activity center for many passive and active recreational opportunities.

- Nature and maturity of plant types exhibits a forest-type ambiance.

- Scale and variation is spatial quality produced by high-number of tree specimens allows for sense of discovery, personal reflection, and study.

The Quad lawn

Old Main Hill

photo credit utahbirds.org

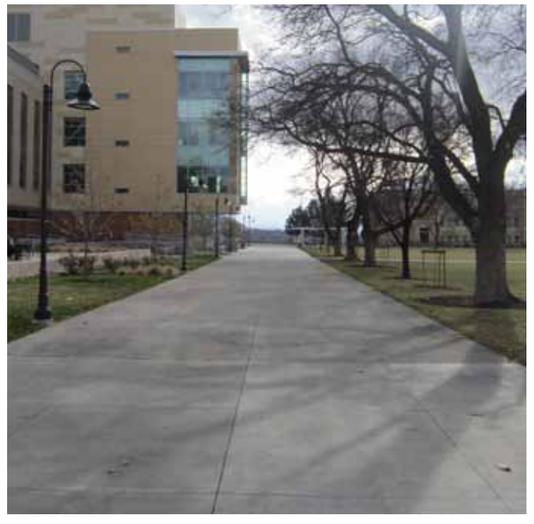
05.2 ADJACENCY/TERTIARY ZONES

Adjacency / Tertiary Zone: Inventory & Recommendations

- Iconic allee of historic Maple trees that outline Quad are a distinguishing icon of the campus, provide shade for users and lend a sense of calmness and tranquility to the space.
- Understory plantings beneath north pedestrian thoroughfare include various types of grasses, annual/perennials, and shrubs.
- Landscaping adjacent to Ray B. West Building is composed of a variety of perennials and grasses that provide a visual buffer to Champ Drive and render qualitative compositions of textures and colors throughout the growing season.
- South side of historic Old Main maintains excellent consideration for ornamental annuals and grass landscapes.
- There are a number of historic trees around the front facade of Old Main.
- Enhance and diversify the understory planting themes to exhibit more seasonal interests, colors, and textures.

Looking east along Champ Drive

Looking east along double promenade

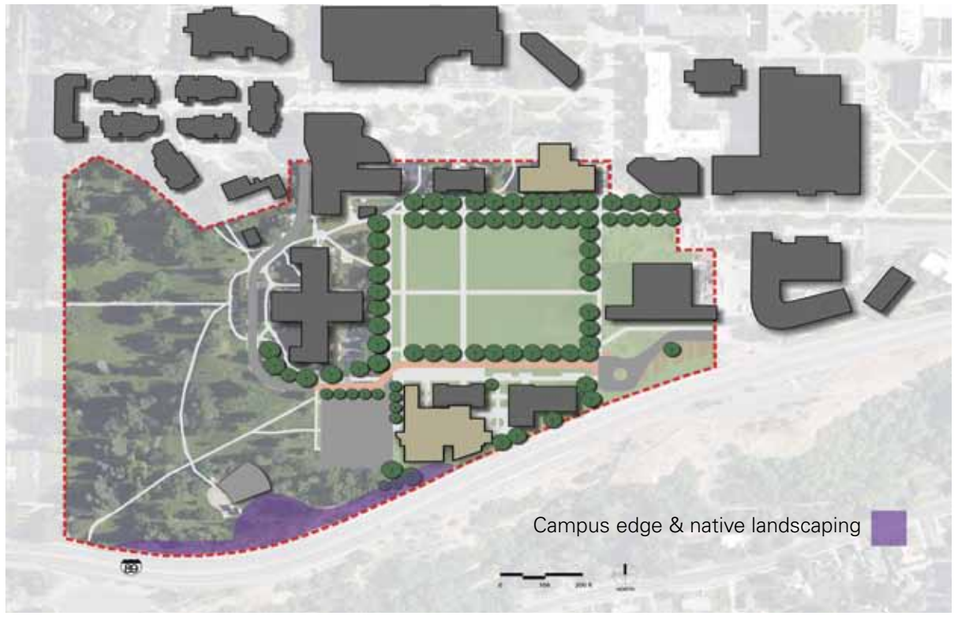


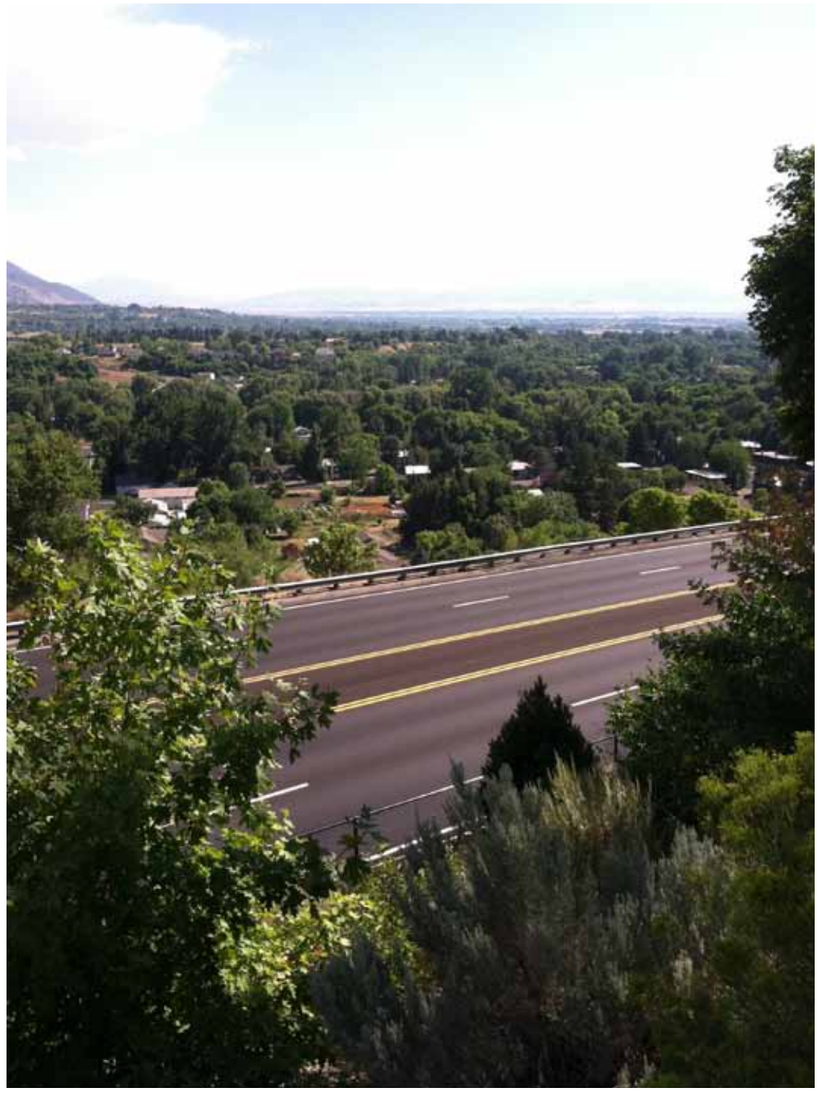
Looking south toward Agricultural Sciences

Looking south by Old Main

Campus Edge & Native Landscape Zone: Inventory & Recommendations

- Creates a visual and physical safety buffer to Highway 89, improves aesthetic and decreases sound pollution.
- Native plant selections serve as educational example for water-wise landscapes - highlighting their many attributes such as season color variations and textures, climactic adaptability and wildlife habitat creation.
- Vegetation serves as slope retention / stabilizing element.
- Ensure the health of the landscape with proper maintenance and replacement plantings where necessary.
- Apply this landscape as a working template for other areas on campus where native landscapes may be warranted.
- Extend native landscape zone adjacent to amphitheatre and reference Utah State University Campus Recreation and Open Space Master Plan for recommendations regarding plant palette.





View of Cache Valley with Campus Edge landscaping along Highway 89

05.2 ADJACENCY/TERTIARY ZONES

Gateway Zone: Inventory & Recommendations

- The intersection of Champ Drive and Highway 89 serves as a gateway zone for entry into campus. At this location, the new Agricultural Sciences building is a distinguishing landmark with ornamental landscaping in high concentrations of annual plantings. It accentuates its intent with a strong presentation in horizontality along the ground plane.
- Introduction of taller and highly dramatic plant selections would help anchor and facilitate a sense of destination and arrival.
- Large pine species exist on both sides of Highway 89. Small, inconspicuous understory planting exist of various perennial types.
- Like the recommendations proposed for Champ Drive, two gateway planting zones are proposed along 700 East. These include an increase in larger and more ornamental plant choices which lend a warm greeting to visitors on foot or in vehicles and notify them of arrival to the campus.

Gateway landscaping at Champ Drive adjacent to the Agricultural Sciences Building

05.4 SUSTAINABILITY GUIDELINES

In 2007, Utah State University President Albrecht signed the American College and University Presidents' Climate Commitment (ACUPCC), committing the university to achieve carbon neutrality by 2050. With this goal in mind, the Utah State University 2012 Energy Conservation Plan provides an overview of the University's progress to date, as well as a framework for how future progress is to be made in design and renovation of USU facilities and ongoing initiatives. The Campus Master Plan for the Logan campus doesn't provide overarching sustainability guidelines, so this District Plan will seek to provide guidelines specific to the needs and opportunities to the Quad District. These guidelines seek to incorporate recommendations from ongoing campus initiatives championed by "Blue Goes Green", the Utah State University 2012 Energy Conservation Plan, as well as appropriate national trends and initiatives such as Leadership in Energy and Environmental Design (LEED™) and Sustainable Sites Initiative (SITES).

Although the much of the Quad District is fully developed, there are still a few potential sites for new construction or renovation and replacement of existing structures which have arisen during the planning process. As such, the following measures will respond to opportunities for both new construction and existing facilities. A summary list of potential sustainability opportunities and guidelines relevant in the Quad District are listed in the four following categories.

Utah State University Bingham Entrepreneurial & Research Center in Vernal, Utah

05.4 SUSTAINABILITY GUIDELINES

Site Amenities

Creating a holistically sustainable district is the goal of the site amenities portion of the guidelines. This includes use of recycled materials, supporting active and healthy lifestyles, and taking advantage of natural systems which already occur on site. The following potential strategies are just some of ways that the site sustainability in the Quad district could be improved.

- Outdoor recycling containers/receptacles adjacent to trash bins
- Support bicycle use with bike racks near entrances. The addition of bicycle repair stations is recommended.
- Landscape elements adjacent to provide shading / solar exposure
- High albedo paving/finishes
- Consider life-cycle cost analysis when selecting site amenities
- Emphasize acquisition of site infrastructure products which are locally produced using recycled materials
- Utilize materials that are durable, long lasting and fit the overall style of the Quad District

Existing bike racks near buildings entrances are heavily used and encourage healthy lifestyles

Example of a potential combination of recycling and trash containers

High albedo paving materials reflect the sun's rays to avoid creating heat energy

05.4 SUSTAINABILITY GUIDELINES

Water Conservation & Water Management

Set in a semi-arid portion of the Intermountain West, much of the water utilized for building services and site irrigation comes from snowmelt. As such, it is a precious resource to be carefully managed. The following potential strategies are ways that water in the Quad District can be efficiently managed and conserved.

- Reduce potable water use for irrigation
- Rainwater reuse
- Manage stormwater onsite
- Selective use of turf grasses
- Permeable paving
- Green roofs to capture rainwater, extend roof life, increase thermal performance where feasible
- Protect and restore natural hydrologic functions (primarily on the steep hillsides on the south and west boundaries of the Quad district

Example of a green roof

Pervious paving allows water to infiltrate into the soil

05.4 SUSTAINABILITY GUIDELINES

Building & Systems

According to the US Environmental Protection Agency, buildings account for 36% of total energy use, and 65% of electricity consumption in the United States. Utah State University has committed to the ACUPCC to achieve carbon neutrality by 2050. The following strategies are some of the ways that the existing and future facilities in the Quad district can assist in achieving this important goal.

- Use photovoltaics & wind turbines to produce alternative energy, in ways that are not obtrusive to the overall historic feel of the Quad District
- Configure building massing for passive ventilation and solar gain where feasible
- Consider building footprint and materials for daylighting and thermal lag opportunities in new construction
- Consider geothermal opportunities for existing and new construction
- Occupancy sensors and automatic lighting where appropriate
- Design and construct new facilities to meet LEED Silver or higher
- Implement 2012 Campus Energy Conservation Plan measures addressing the climate accord to reduce energy use intensity (EUI), lower plug loads and phantom loads
- Retro-commissioning of existing buildings to determine the needs and opportunities of existing facilities in the Quad district

Building-integrated photovoltaics at the Agricultural Sciences building

Retro-commissioning of existing facilities such as Ray B. West could identify potential options to maximize building system efficiency

05.4 SUSTAINABILITY GUIDELINES

Land Use

The Quad District is surrounded on all sides by residential development, Highway 89, and other campus districts, thus future opportunities for expansion are extremely limited. The efficient use of the remaining land with potential for future buildings or other forms of programmed space must be carefully managed. The following guidelines seek to maximize the land use efficiency of the existing and future facilities.

- Increase implementation of mixing uses in Quad District allowing the district to meet the needs of the students and faculty who is it daily. This includes providing cafes and other services which currently require travel outside the Quad District
- Increase density of buildings in order to protect open space and avoid sprawl, as well as maximize use of existing campus infrastructure
- Renovate, make additions or replace existing buildings to utilize space as efficiently as possible
- Protect open space for recreation and gathering
- Further incorporate transit and alternative modes of transportation on campus
- Preserve existing viewsheds to and from the Quad

Increased density of buildings allows important open spaces such as the Quad to remain a resource for students and faculty

Protection of existing view sheds provides an important reminder to respect and protect the beautiful scenery of the Cache Valley

06 APPENDIX

06.1 APPENDIX - RESOURCES

The following resources were provided by Jordy Guth of USU Facilities Planning, Design & Construction, and are referenced throughout this Quad District Master Plan:

Campus Master Plan Utah State University; June 23, 2011

Pictures Past: A Centennial Celebration of Utah State University; January 1, 1988

USU Recreation and Open Space Master Plan; August 2013

USU Bicycle Master Plan: Developing Unique Plan Components Specific to Campuses; October 15, 2012

USU Historical Buildings; year unknown

Utah Public Radio and Broadcast Building Architectural Program; June 1, 2011

Utah State University State Funded Capital Development Projects: Five Year Plan FY 2013-14; July 13, 2012

Utah State University Quad Tree Replacement Master Plan; April 23, 2010

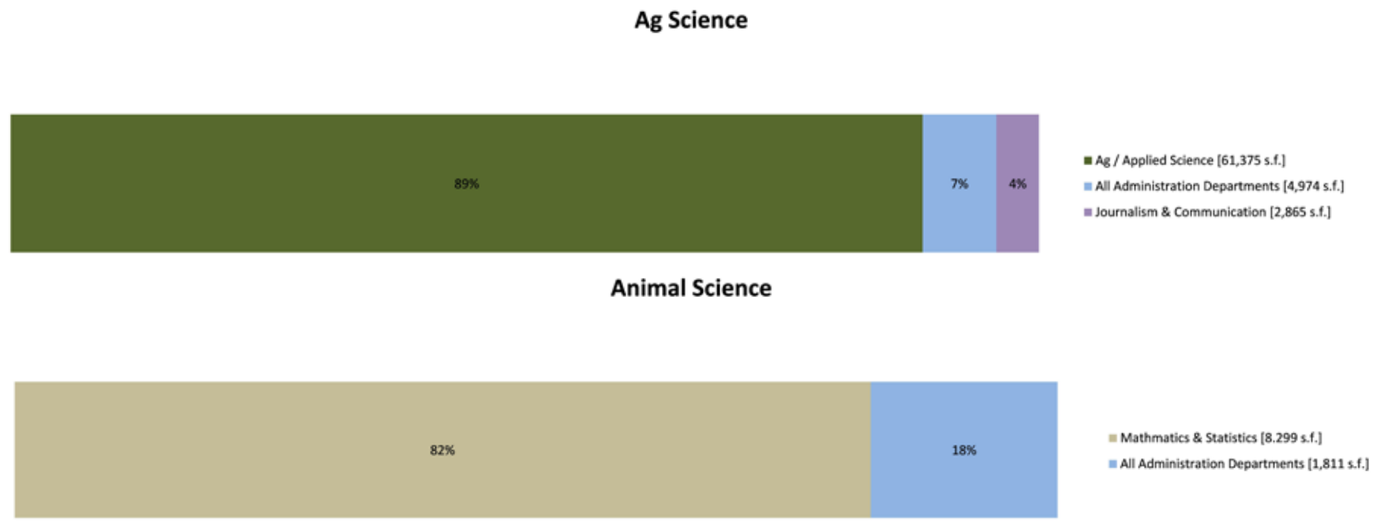
Utah State University 2012 Campus Energy Conservation Plan; 2012

CHaSS Feasibility Basic Info & Renderings

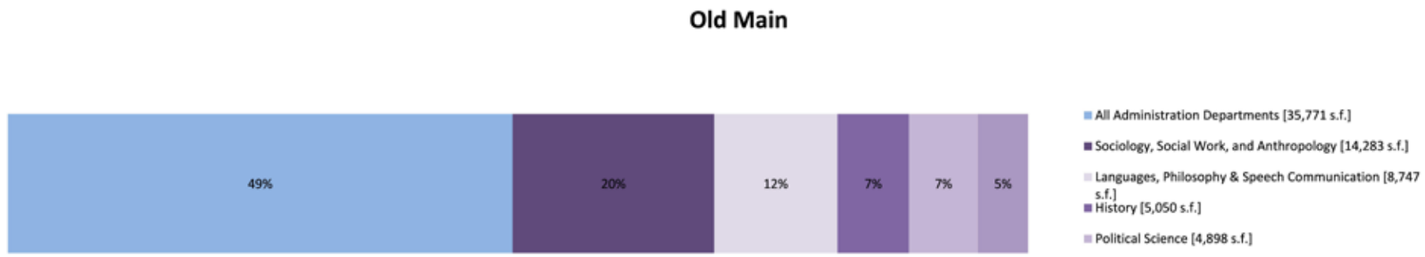
- 127,000 GSF on four floors
- 2 lecture halls; (1) 200 seat, (1) 300 seat
- 15 classrooms (35 to 80 seats)
- 3 seminar rooms
- 60 offices with support space for faculty/staff/adjunct/grad students
- Utah Public Radio
- Museum of Anthropology
- Humanitarian Center
- CHaSS Advising office
- Group study rooms
- Commons spaces including CHaSS Café & central atrium

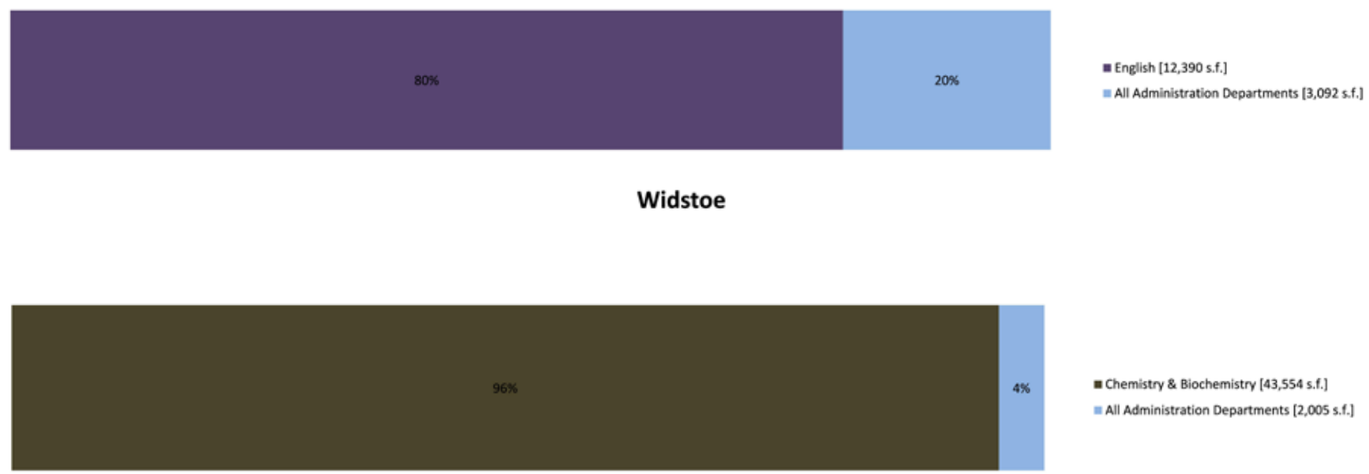
CHaSS Feasibility Renderings

Building Utilization by Department



Building Utilization by Department



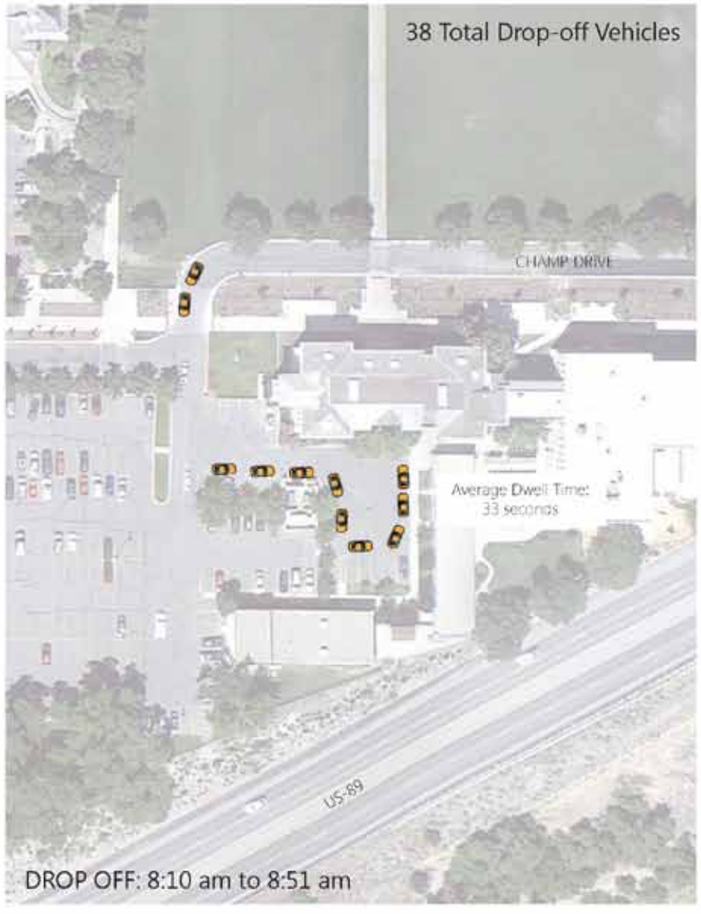


Transportation Analysis & Recommended Alternatives

USU Quad Study
Figure 1
Existing Conditions

FEHR PEERS

Transportation Analysis & Recommended Alternatives



Maxium Vehicle Queue

USU Quad Study
Figure 2
Child Development Lab Conditions

FEHR PEERS

Transportation Analysis & Recommended Alternatives

USU Quad Study
Figure 3
Parking Lot Usage

FEHR PEERS

Transportation Analysis & Recommended Alternatives

USU Quad Study
Figure 4
Existing Pedestrian and Traffic Volumes

FEHR PEERS

Transportation Analysis & Recommended Alternatives

USU Quad Study
Figure 5
5-Year Recommendations

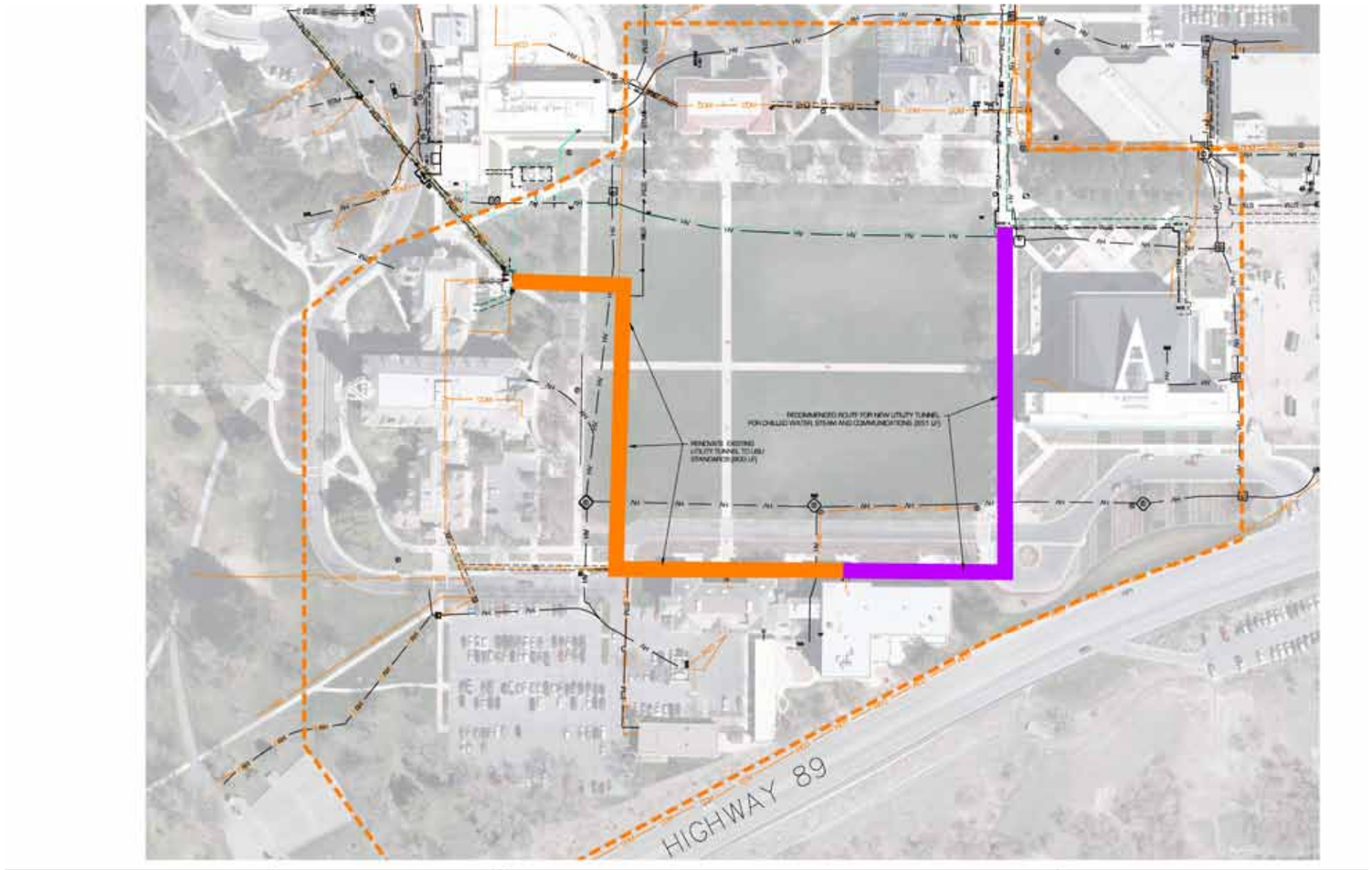
FEHR PEERS

Transportation Analysis & Recommended Alternatives

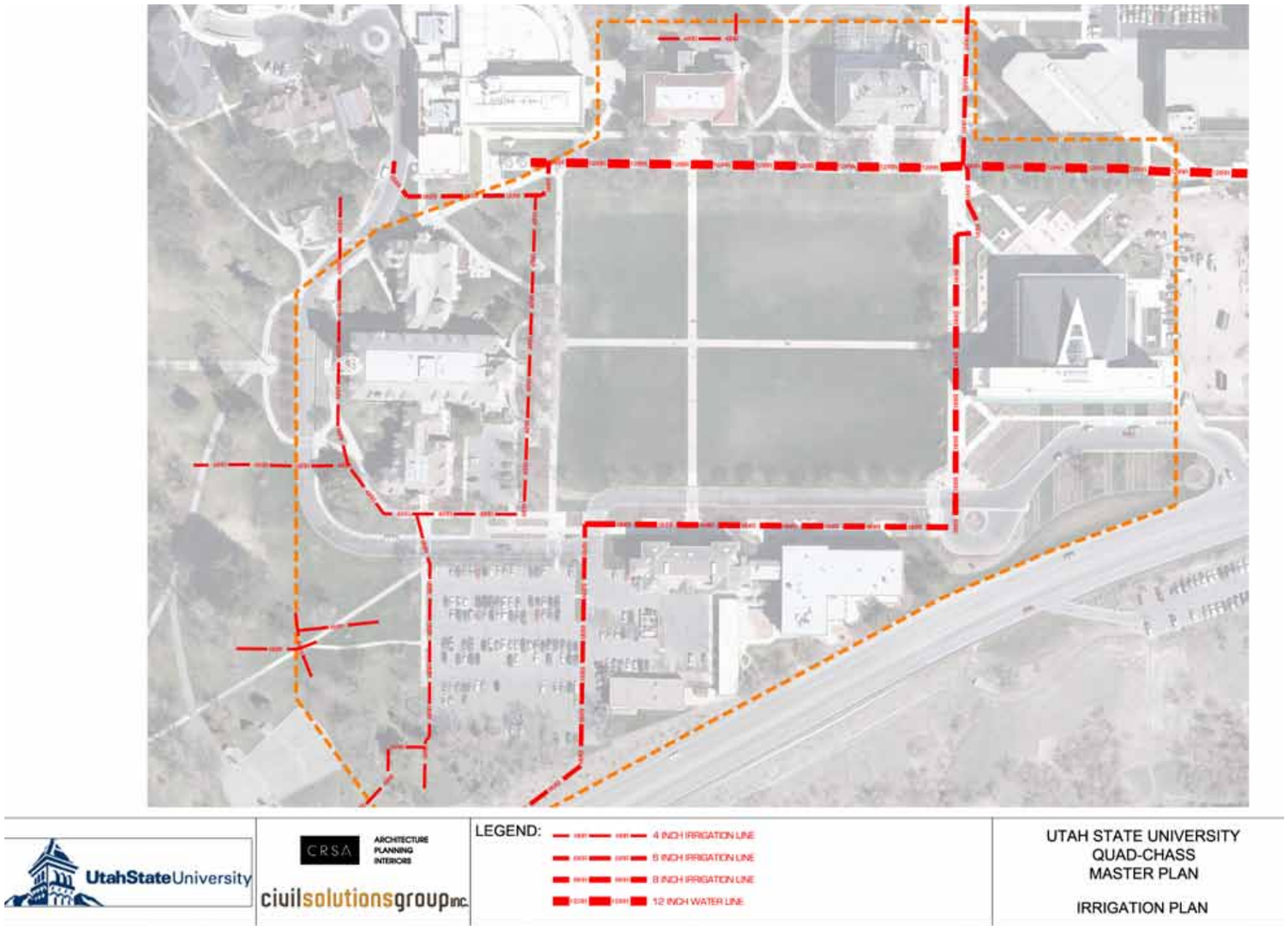
USU Quad Study
Figure 6
15/50-Year Recommendations

FEHR PEERS

Utility Maps



Utility Maps



Utility Maps

Utility Maps

UtahStateUniversity

CRSA ARCHITECTURE PLANNING INTERIORS

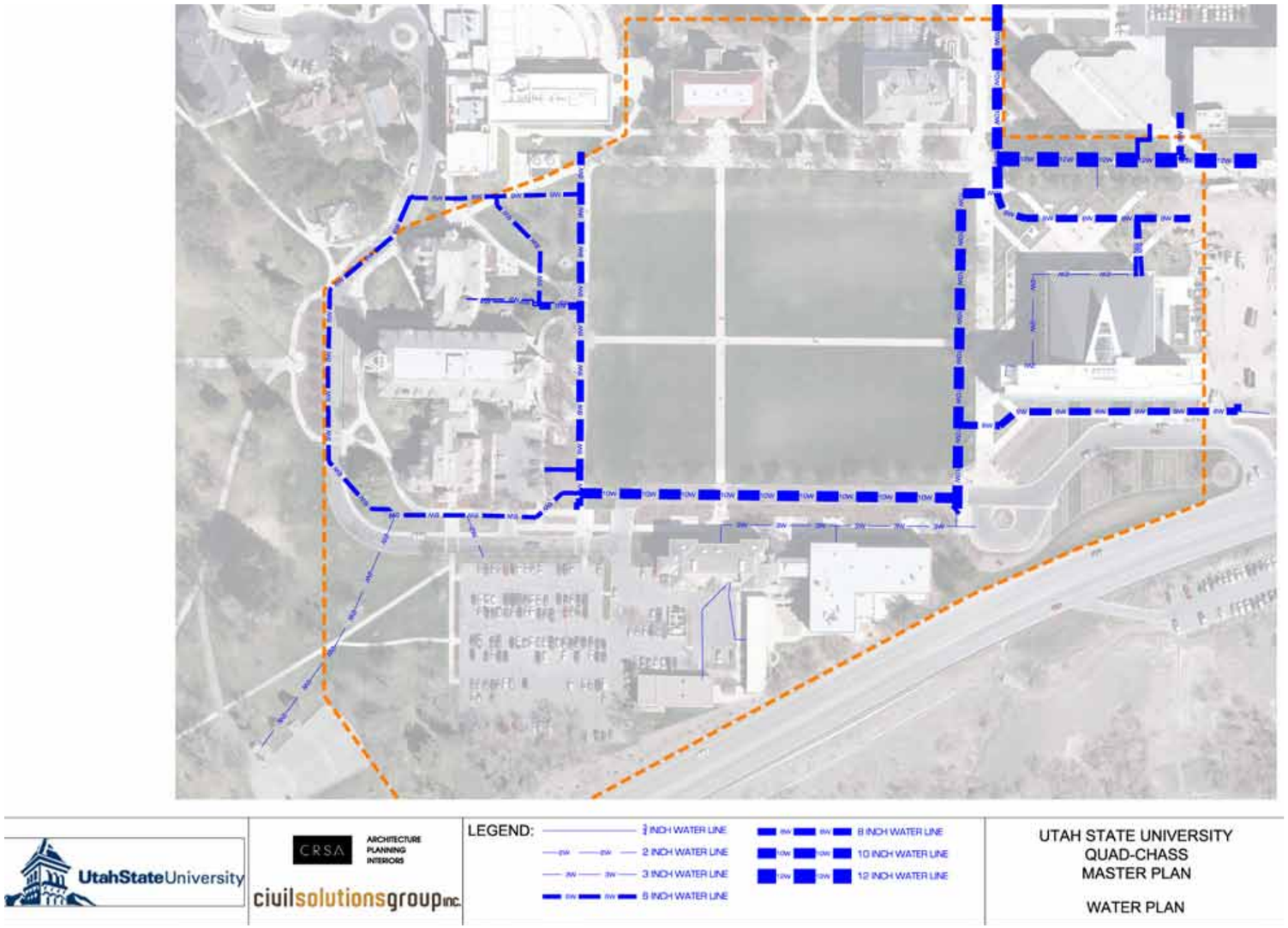
civilsolutionsgroup inc.

LEGEND:
STORM DRAIN LINE
STORM DRAIN MANHOLE
CATCH BASIN
STORM DRAIN SUMP

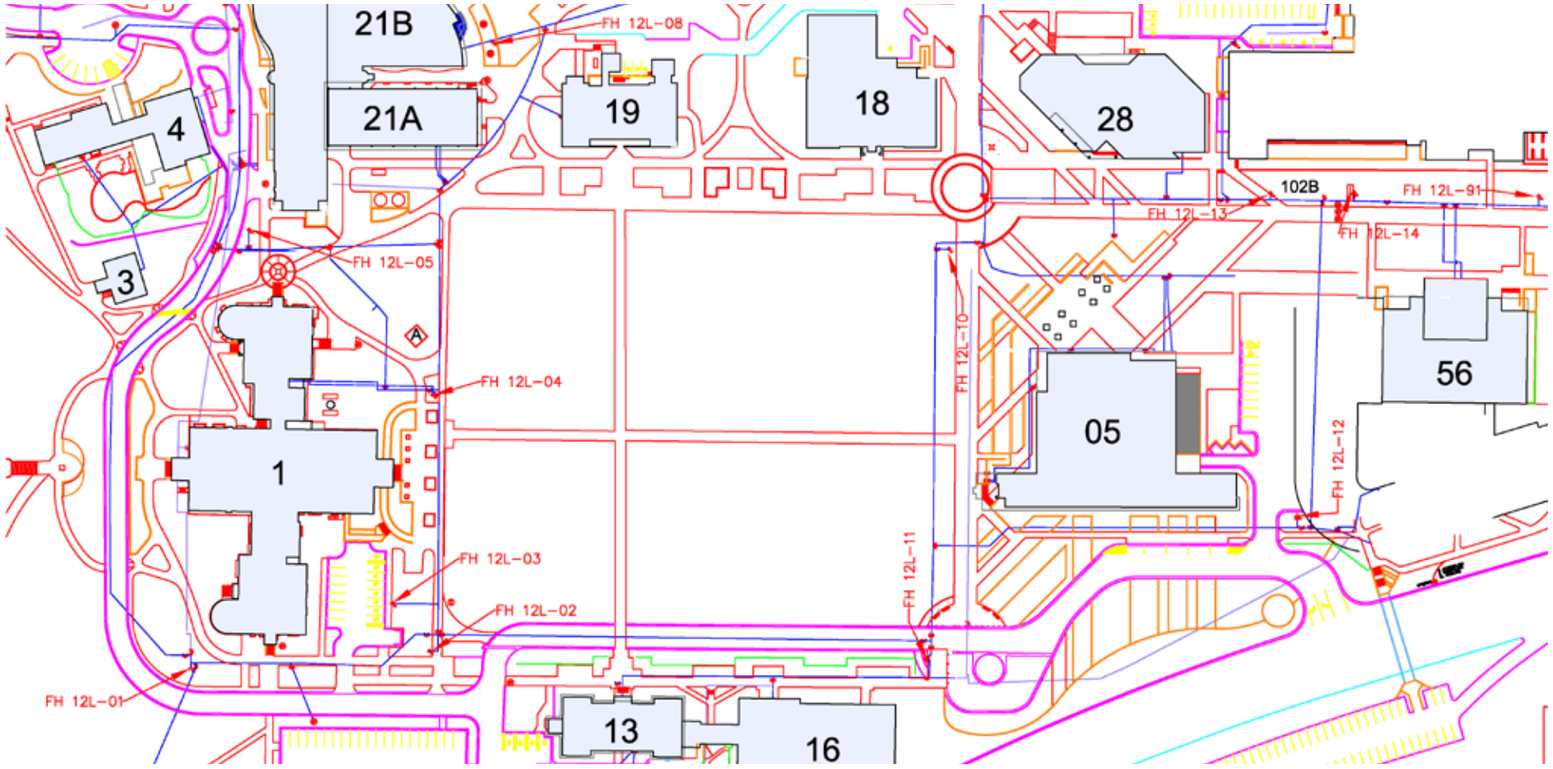
UTAH STATE UNIVERSITY
QUAD-CHASS
MASTER PLAN

STORM DRAIN PLAN

Utility Maps



Fire Hydrant Quad Area Overview



Quad Area

Hydrant Number	*Static Water Pressure at Hose Bib or Adjacent Hydrant*	*Residual Pressure at Flowing Hydrant*	*Residual Pressure at Hose Bib or Adjacent Hydrant*	*Pitot Pressure*	*Outlet Diameter*	*Outlet Coefficient*	*Observed Flow (gpm)*	*Available Flow (gpm)*
1	82	62	70	70	2.5	0.9	1,404	3,408
2	82	70	76	60	2.5	0.9	1,300	4,587
3	82	70	76	60	2.5	0.9	1,300	4,587
4	82	72	76	65	2.5	0.9	1,353	4,774
5	82	70	76	75	2.5	0.9	1,453	5,129
8	82	70	76	75	2.5	0.9	1,453	5,129
10	79	73	72	65	2.5	0.8	1,202	3,802
11	82	68	74	70	2.5	0.9	1,404	4,242
12	75	62	72	45	2.5	0.9	1,126	5,414
13	78	66	67	70	2.5	0.9	1,404	3,445
14	78	66	70	70	2.5	0.9	1,404	4,092
24	80	69	74	65	2.5	0.9	1,353	4,691
91	82	68	76	70	2.5	0.9	1,404	4,955

6.6 APPENDIX

College of Education Child Development Lab Space Needs and Assessment of Potential Future Program Locations

Space needs for Child Development Lab – 9,320 net sf / 10,720 gross sf

1 Child Development Labs
- Infant's Classroom/Observation – 1,000 sf
- 2 Year Old's Classroom/Observation – 1,600 sf
- 4 Year Old's Classroom/Observation – 1,600 sf Three Child Development Labs
- Storage – Indoor Classroom Supplies/Equipment – 660 sf
- Storage – Outdoor Activities / Equipment – 600 sf
- Kitchen – 200 sf
- Lobby – 240 sf

2 Office / Admin Space
- Faculty Offices – 3 @ 120 sf = 360 sf
- Graduate Student Workroom – 16 @ 80 sf = 1280 sf
- Administrative Assistant / Reception – 160 sf
- Copy/Mail/Work Room – 120 sf
- Conference Room – 360 sf

3 Academic
- 35-seat Classroom – 1,200 sf
- Support – (1.2 efficiency factor – 1,400 sf)
- Hallways
- Restrooms
- Mechanical Room
- Outdoor Storage

Space Accommodation
Space currently used by the College of Education Child Development Lab, that would be impacted by the construction of a new CHaSS TLC, currently occupies 6,268 sf in Family Life and approximately 1,560 sf in the Gun Shed. Space currently utilized in Family Life includes approximately 4,900 sf on Level One. Child Development Lab space in Family Life includes rooms: 105, 107B, 102A-C, 104, 104A, 106, 106 A-C, 106E, 108, 110, 112, 112 A-B, 116, 116 A-C. Gun Shed spaces include: 101 – 105.

Space on campus should accommodate significant short term vehicular access for parents during drop off and pickup hours, an outdoor play area, staff parking area for 20 vehicles and building space needs. If a new Child Development Lab Building were to be constructed, it may be able to be accommodated just west of 800 E, adjacent to existing College of Education facilities.

Potential site for Future Child Development Lab Building