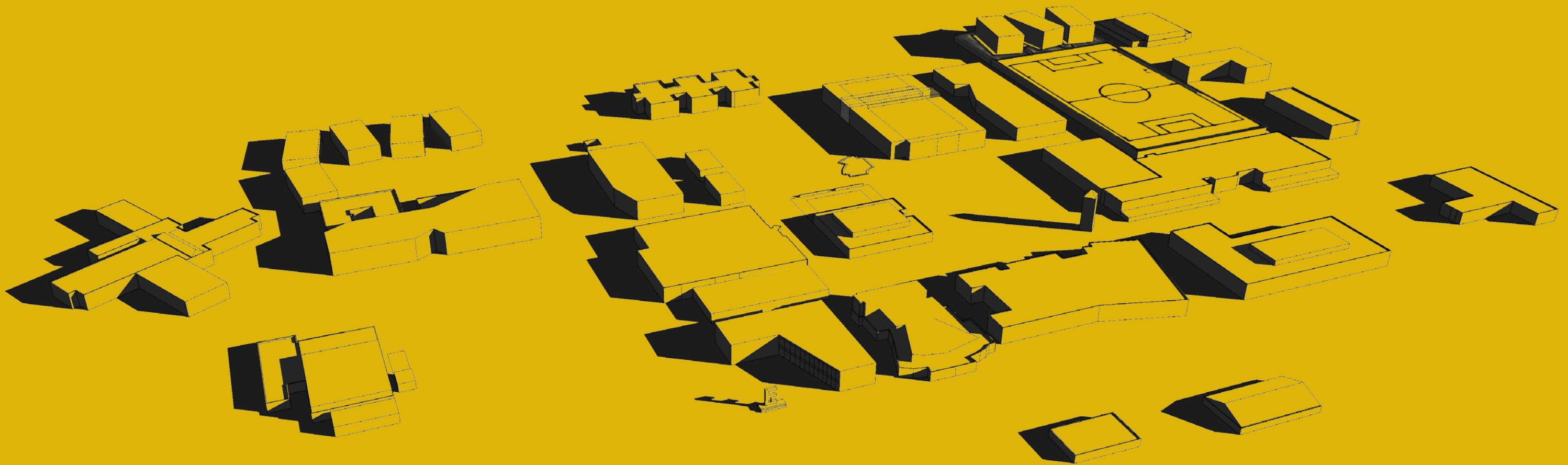


PRICE CAMPUS MASTER PLAN





acknowledgments

Consultants

CRSA

Kathy Wheadon, LEED AP
Kelly Gillman, ASLA, AICP
Donald Buaku, AICP
Bryce Ward

*President
Senior Principal, Senior Planner
Urban Designer & Planner
Landscape Designer*

Fehr & Peers

Preston Stinger, PTP, LEED GA
Seishi Yamagata

*Transportation Engineer
Transportation Engineer*

Johansen & Tuttle

Jonathan Johansen, PE

Civil Engineer

VBFA

Neil H. Spencer, PE, LEED AP

Mechanical Engineer

Spectrum Engineers

Chris Kobayashi, PE, LEED AP

Electrical Engineer

Utah State University

Joe Peterson
Peter Iyere
Greg Dart
Melanie Nelson
Eric Mantz
Sheila Burghardt
Ben Berrett
Jordy Guth
Thomas Graham
Jim Huppi
Vicki Noyes
Kyle Willis

*Chancellor
Vice Chancellor,
Vice Chancellor
Associate Vice Chancellor
Associate Vice Chancellor
Facilities Director, Price Campus
Director of Planning, Design & Construction
Asst. Dir. of Facilities Planning, Design & Construction
Architect
Landscape Architect
Administrative Assistant
Operations Maintenance Supervisor*

Price City

Paul Bedont
Nick Tatton

*Fire Chief
Building Development, Planning & Zoning*

Thank You to all Faculty, Staff, Students, Stakeholders,
and the Community of Price.

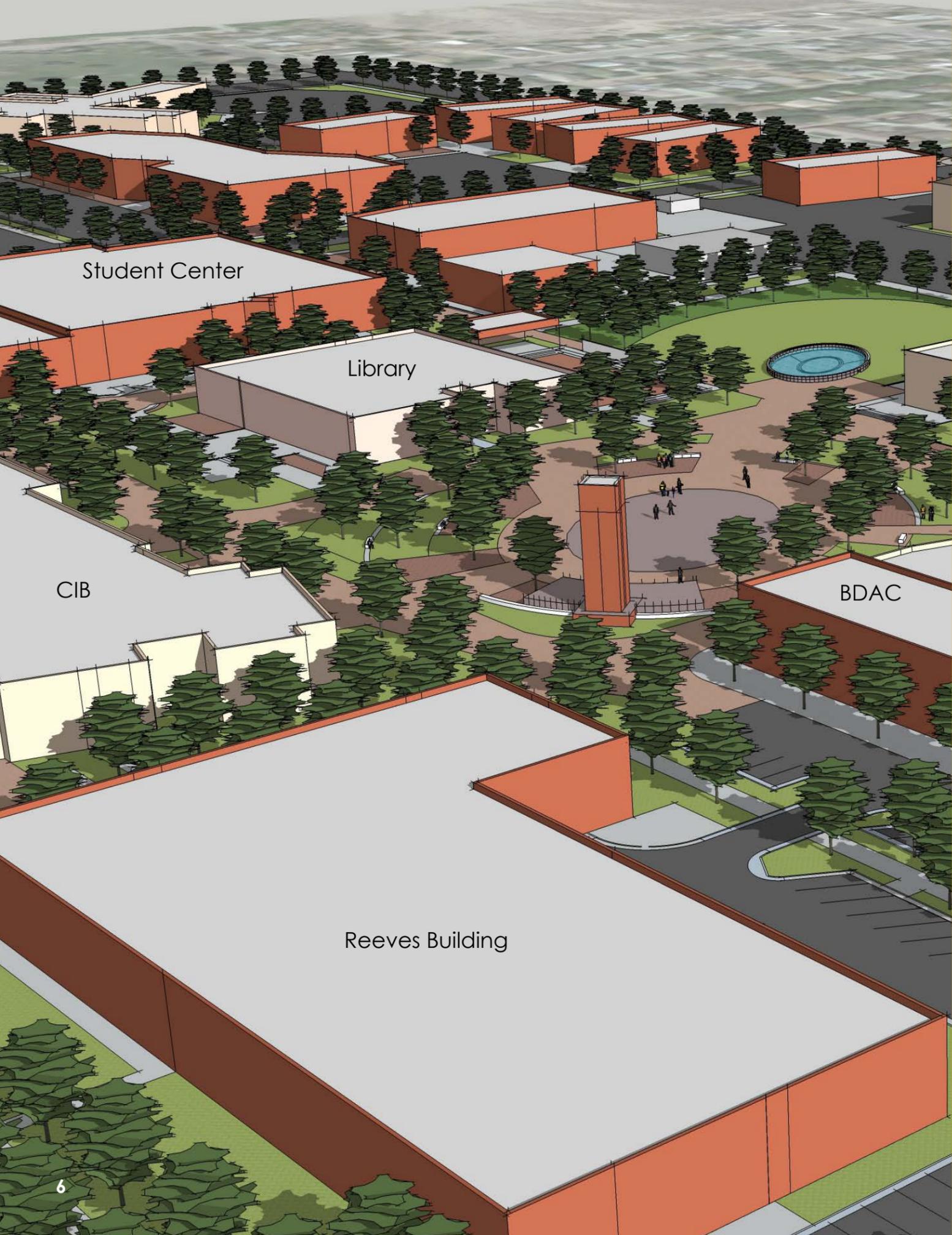
PUBLISHED FEBRUARY 2016

JENNIFER LEAVITT
STUDENT CENTER



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MESSAGE FROM THE CHANCELLOR



It is with great passion and pleasure that I present to you this vision for the future development of USU Eastern's Price Campus.

A college campus represents the past, present and future of the institution. It embodies the history, current issues and the future aspirations. USU Eastern has come a long way and has created a niche for itself as a prominent branch in the USU system.

This updated Campus Master Plan represents a 50 year vision for the Price Campus. Emphasis has been placed on phasing and a logical

progression for developing new infrastructure to support growing programs, enrollment numbers and educational needs. We have also focused on the carrying capacity of the campus and the possibility of supplementing space needs with outlying campus properties. The Plan's process included a collaborative process which involved a campus-wide effort with Faculty, Staff, Administration, Students, and Community Leaders.

The Master Plan has been organized around the following priorities:

- **Campus Growth Capacity**
- **Phasing**
- **Programs & Services**
- **Campus Character & Image**
- **Facilities & Utilities**
- **Operations & Maintenance**

The overall campus vision, based on these priorities, is presented in this document. Strategies have been put in place to guide a phased growth scenario. The implementation, designed to be flexible within purported time frames, will support the overall vision of USU Eastern Price Campus, and contribute to the broader mission of USU.

A handwritten signature in blue ink, reading "Joe Peterson".

Dr. Joe Peterson
Chancellor, USU Eastern

1. introduction

OVERVIEW

WHY MASTER PLAN?

A master plan establishes a framework for coordinating future development and physical change. This framework defines patterns and characteristics that maintain the unique qualities of the campus, while identifying strategic opportunities for growth. The physical environment has a tremendous influence on the excellence of education, quality of life, and the image of a college. Thus a master plan serves as a guide for shaping and reinforcing a campus's unique attributes, institutional culture and academic mission.

MAJOR GOALS

A successful campus master plan responds to the particular needs of the campus. In this case, the major goals for determining the success of this plan were as follows:

1. Accommodate projected changes in enrollment
2. Preserve USU land grant legacy, while also continuing the College's historic emphasis on low-cost CTE and lower-division programming
3. Maintain a compact walkable academic core
4. Strengthen & clarify USU's image
5. Enhance compatibility with the community
6. Cultivate community vision and support
7. Maintain consistent spatial density
8. Efficient and safe pedestrian and vehicular travel
9. Sustainability and energy efficiency

PLAN STRATEGIES

1. Compatibility with community grid system
2. Incorporate quads and courtyards
3. Identify key nodes and gateways
4. Maintain a network of open spaces
5. Use buildings to strengthen street frontage and to frame open spaces
6. Adequate parking
7. Compact core and infrastructure efficiency
8. Appropriate scale of development
9. Sensitivity to surrounding zoning
10. Incorporate principles of sustainability for building and site design



The main campus is located close to the core of Price City and surrounded generally by development - mainly residential and institutional uses.

The primary focus of the Master Plan will be on the main campus

A 6.92 acre parcel, known as the Bob Henry Property, is located about a 1/4 mile to the east of the main campus, and is available to USU Eastern as campus property.



2. campus vision & programming

Utah State University Eastern (USU Eastern) is a comprehensive regional college within the Utah State University system. USU Eastern has two campuses, one in Price UT, and another in Blanding, UT. Founded as Carbon College in 1937, the college joined the University of Utah system in 1959 for 10 years and was renamed College of Eastern Utah. The College of Eastern Utah (CEU), entered the USU system on July 1, 2010 and is currently called Utah State University Eastern. With more than 60 degree programs, the college focuses on technical, vocational, and Associate Degree programs.

HISTORY

In 1937, the legislature established Carbon College, Utah's first state-supported two year institution. The local newspaper described the event as "one of the most important educational advancements in the history of eastern Utah." During the first week of October, 1938, about 100 students enrolled in the first classes offered at the College. The campus has grown to an enrollment of approximately 1600 students at the Price Campus, with additional students at the Blanding Campus. As of 2015 there are 16 academic and residential housing buildings on the Main Price Campus comprising approximately 484,500 GSF, with an additional approximately 20,500 GSF in support structures.

The Price Campus is located in a community of 17,000 in central Utah. The intersection of 400 North and 300 East is the prominent and traditional community main entry to the campus. The campus is located an hour's drive from the high alpine landscape of the Wasatch Plateau to the west and the spectacular deserts of the Book Cliffs and the San Raphael Swell to the east and south.

Forty percent of credit-seeking students are enrolled in career and technical education programs. Other students enroll in general education programs as preparation for a four year degree. The recent merger with Utah State University has allowed students to now pursue many of those degree programs without transfer. Affordable tuition rates combined with a residential atmosphere create a setting where students can learn to navigate the college experience.

USU Eastern Campuses (Price and Blanding) goals include increasing enrollment by 4,000 students (headcount) by fall of 2017, with a significant portion assigned to the Main Price Campus. The mission of USU Eastern is to "prepare the people who create and sustain our region." In addition to providing education for local residents, one of the most important services the institution provides is to attract people from outside the region. USU Eastern wants to create a high quality experience that will encourage some of these students to stay in the region as long-term residents, sending the remainder out into the world as "ambassadors" for Southeast Utah.

Current and anticipated future changes for USU Eastern - Price have made critical the need for a comprehensive master plan. The plan will link the possibilities of current and future buildings, and the needs and goals of USU, the community, and the region. The master plan will assess the physical aspects of the buildings, property, infrastructure, and transportation, gather data on enrollment trends, current and future program goals, and community and regional relationships. The master plan will use this data to shape a vision for the future of USU Eastern. The master plan will establish a campus environment that fulfills the higher education needs for this campus for 50 years.



ACADEMICS

USU Eastern offers more than 60 degree programs in academic, technical, and vocational fields. The college is separated into two academic divisions:

- Division of Liberal Arts and Sciences
- Division of Professional Technology and Workforce

Other disciplines and degree options include anthropology, criminal justice, museum studies, biology, geology, business, diesel equipment technology, and small business development. USU Regional Campuses and Distance Education provides access to various Bachelor's, Master's and Doctoral degrees on site.

ATHLETICS

USU Eastern competes athletically as the Eastern Utah Golden Eagles and is the only campus in the USU system to have its own athletics program. The Golden Eagles are a member of the Scenic West Athletic Conference (SWAC) and the National Junior College Athletic Association (NJCAA). The Bunnell Dmitrich Athletic Center serves as a venue for many of the athletic events. The Golden Eagles compete in men's baseball and basketball and women's basketball and volleyball. Starting in 2014 they will also compete in men's and women's soccer. Additionally there are several intramural sports such as ultimate frisbee, flag football, and volleyball.

MISSION

USU Eastern is part of the larger USU network and shares the Institution's Mission Statement which states:

"The mission of Utah State University is to be one of the nation's premier student-centered land-grant and space-grant universities by fostering the principle that academics come first, by cultivating diversity of thought and culture and by serving the public through learning, discovery, and engagement."

As an integrated unit of the University, USU Eastern contributes to this mission. Furthermore, the USU Eastern focuses on the following purposes"

"With efficiency, innovation, and excellence, USU Eastern prepares the people who create and sustain our region."

EXISTING CONDITIONS - Facilities

Several of the campus buildings have been constructed within the last 20 years and have a projected use of 30 to 40 additional years. Core buildings on campus were built during an extreme growth period during the 1960's and have reached the end of their life cycle.

The **Central Instructional Building (CIB)** was completed in 2015. The 54,000 square foot facility will house theater, music, art, criminal justice, and communications and will provide much-needed additional classroom space for general and vocational education.



Jennifer Leavitt Student Center (JLSC) Constructed in 1998, the 49,500 square foot Jennifer Leavitt Student Center is one of the newer buildings on Campus and is the hub of student activities. The first floor houses student government (CEUSA) offices, bookstore, food services, and meeting/conference rooms. The second floor houses student services and registration offices. The Student Center serves as a campus gateway for visitors and students entering campus from 300 East.

McDonald Career Center (MCC) The McDonald Career Center, built in 1977, houses the Nursing Department, Work Force Education, Art, and the Welding, Automotive, Diesel, and Machine Shops. The building has a total area of 59,595 square feet.

West Instructional Building (WIB) The West Instructional Building houses the English and Math departments, the Business Office, Child Development, and the USU Extension Service program. Built in 1956 and remodeled in 1991, the WIB provides a total area of 53,745 square feet.

Bunnell Dmitrich Athletic Center (BDAC) The 49,941 square foot Bunnell Dmitrich Athletic Center, constructed in 1985, is the home to Eagle volleyball and basketball. It also serves as a community wellness center with racquetball courts and two weight rooms.

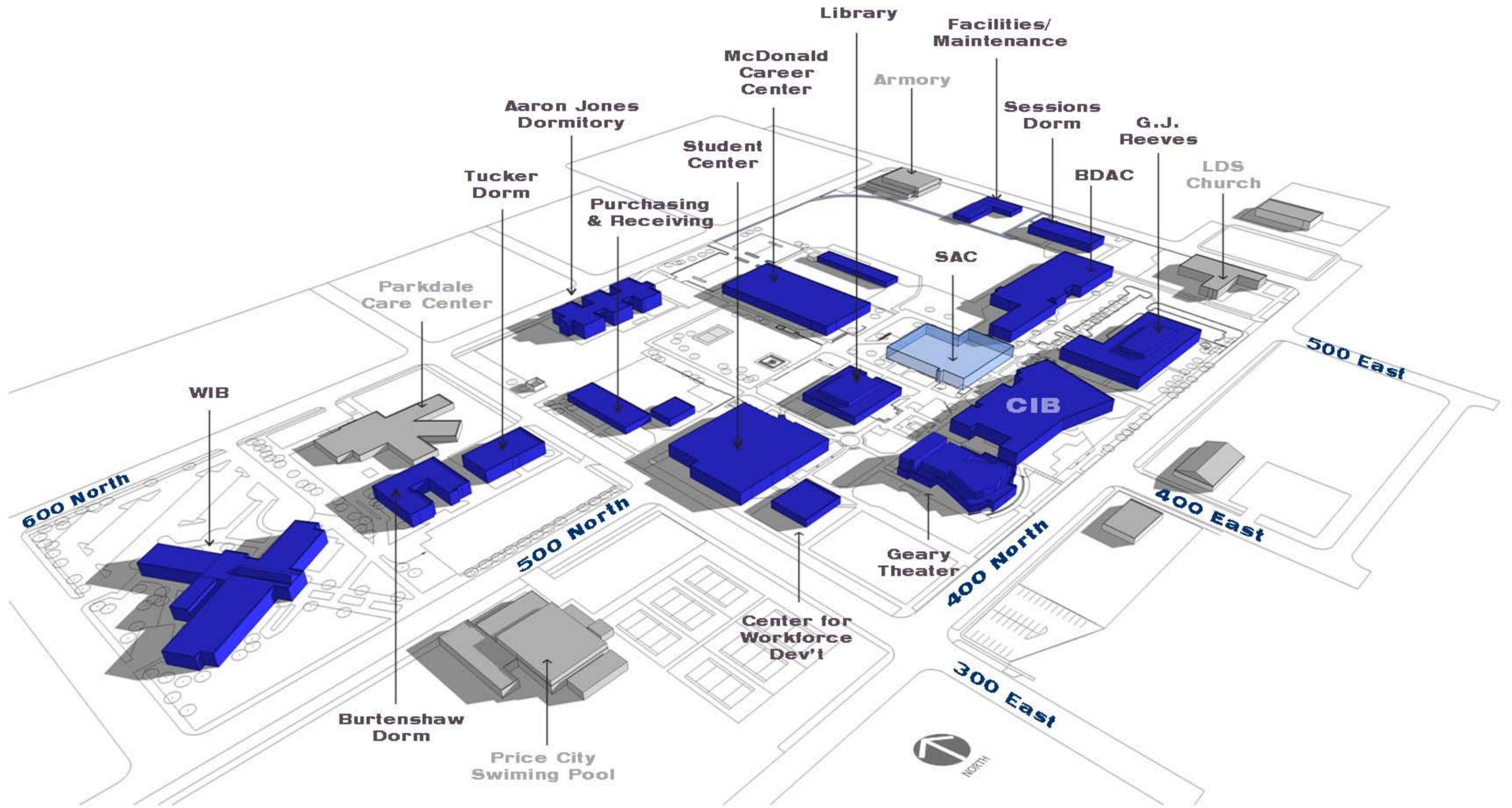
G. J. Reeves Building The 71,250 square foot G.J. Reeves classroom building was completed in 2003. The newest building on campus, it houses the campus administrative functions, class rooms, office space for the Science Department and state-of-the-art computer labs.

Student Activity Center (SAC) The Student Activity Center, completed in 1939, is the oldest building on campus and has a limited life expectancy. Providing 26,654 square feet, it presently houses the Cosmetology program, Testing Services, Graphics Art, Journalism, the Wellness Center, the Disability Resource Center, and the Campus Post Office. Due to structural problems described in a recent inspection, the Student Activity Center is slated to be demolished following construction of the CIB in the autumn of 2015.

Library The existing 20,845 square foot Library was constructed in 1967 and was structurally and aesthetically upgraded during the 1990's. The Library has open study space, computer research and teaching space, meeting/conference rooms, special collections, and three study rooms.

Geary Theater The Geary Theater, with 16,481 square feet, was constructed in 1960 and is one of the oldest buildings on campus. The Theater houses a stage, dressing rooms, offices, and control booth. It is not only inadequate in size to support the required program, but also has several fire code, ADA code compliance, and seismic problems. A building addition and renovation, slated for completion in 2018, will remediate many building deficiencies.





Existing Conditions as of 2015. SAC to be demolished in 2016.

Center for Workforce Development The building was constructed in 1985 and, although small with 5,316 square feet, is in good condition. The building houses once housed ceramics classrooms, two offices, and a small supply storage area. It is currently used as office space for the Center for Workforce Development.

Trucking and Heavy Equipment The Heavy Equipment and Trucking program resides in a 9,127 square foot facility located south of Price on Highway 10. Built in 1970, this building houses two classrooms, two offices, and a shop/parking area for diesel trucks and equipment.

RESIDENCE HALLS

On-campus housing fills an important role in campus life. Occupancy exceeds eighty percent of available beds and the rising popularity of “private” rooms for students pushes room occupancy to nearly 100 percent. With the College’s ability to eliminate outstanding debt on the Aaron Jones and Burtenshaw dormitories in 2006, the housing program is now a vital profit center for the College’s auxiliary system. Unburdened by debt, the College aggressively moved to modernize student housing using retained earnings from operations while holding rates steady.

Sessions Hall Sessions is a traditional dormitory containing 90 beds with individual bedrooms and shared lavatory and shower facilities. Sessions is the oldest residence hall and is offered to students as a low-priced alternative to the more modern facilities.

Tucker Hall Comprised of eleven three bedroom apartments with full kitchen and bath facilities, Tucker offers 58 beds. Tucker is the second oldest housing facility and was constructed in 1984. Future upgrades to the Hall include a cooling system for the warmer months.

Burtenshaw Hall Includes 17 sleep-study suites with a total capacity of 102 beds. The units do not include cooking facilities, but offer in-unit bathroom facilities. Burtenshaw traditionally houses student-athletes with floors divided between female and male students.

Aaron Jones Hall Aaron Jones Hall, the College’s newest residential facility, was built in phases during the 1990’s. Aaron Jones Hall offers a combination of sleep-study suites and cooking apartments with a total capacity of 210 beds. Like Tucker Hall, AJH was largely built to residential standards with volunteer labor.

The construction standard for residence halls has created additional maintenance issues due to the use of less durable materials. The long-term system improvement plan anticipates remediating substandard materials through the maintenance

and repair process. Capital improvement efforts will include addressing issues related to settling and recurring heating/air conditioning problems.

In the future student housing will play a more important role in the College’s ability to attract students. Projections of local high school graduates continue to decline so the College is reaching out to students from other parts of the state, – and the world. International enrollment is expected to climb as students take advantage of stronger world currency and comparably low tuition rates for non-residents. Providing quality housing to out of area students will be critical to maintaining the College’s ability to attract students.



SERVICE BUILDINGS

Purchasing and Receiving Built in 1972, the 11,371 square foot Purchasing and Receiving building houses the Purchasing & Receiving offices, Campus Police, the Motor Pool, and a Criminal Justice Classroom/Lab.

Facilities Maintenance The Facilities Maintenance building was completed in 2001 and provides 8,000 square feet to house the Facilities Management Offices, the Campus Maintenance & Grounds Shop, and the Custodial Warehouse.

Boiler and Chiller Plants The boiler/heat plant houses two large gas fired boilers which supply steam to campus buildings through a tunnel system. Adjacent to this building is the Chiller Plant which supplies chilled water for cooling to most campus buildings. The campus automation system (CSI program) is housed in this building with satellite sites in the Facilities offices.

PROJECTED ENROLLMENT AND STUDENT DEMOGRAPHICS

ENROLLMENT GROWTH & STUDENT DEMOGRAPHICS

The CRSA team collaborated with USU Eastern to develop a comprehensive campus growth projection model to guide the planning of the USU Eastern Campus at Price. USU Eastern had previously developed a goal to increase student growth over a four year period between approximately 2014 and 2018. (This goal was termed as the “4 in 4”). For planning purposes, a growth rate of **10%** has been assigned to this period, up to year 2020. The current campus facilities should be able to accommodate this growth without the need to add significant academic space on campus due to some excess capacity. Subsequent to this time frame a more modest growth rate has been assigned. Growth over the **50 year** planning horizon by design should be managed to correspond with the ability to add capacity to campus. The campus phasing plan outlines a scenario for the growth of campus that includes the replacement of older structures and the construction of new facilities to meet the needs of a growing student population.



Reeves Building

The chosen campus growth rate has also been influenced by the modest future growth expected in the Price area. The Governor’s Office of Management and Budget projects slightly less than 15% growth by the year 2060 in Carbon County, less than 1% a year. Although the community growth rate may be modest, USU Eastern has a goal of recruiting students from outside Carbon County. With established on campus housing and athletics programs, it is likely that growth of the campus can exceed the growth of the community. The primary student demographic is expected to be influenced by the traditional student model, although a strong secondary focus of serving nontraditional students in the community will remain. This

mix is expected to remain throughout the planning horizon, however the student population living on campus is expected to increase to support a growing number of students who will choose USU Eastern from outside Carbon County.

PLANNING ASSUMPTIONS

For the purposes of planning the future physical campus at USU Eastern in Price, key metrics have been selected. The metrics have been chosen to be conservative and ensure the needs of the campus and community are met should conditions or policies change in the future. For planning purposes, a **50 year planning horizon** has been selected upon which to apply growth projections as follows:

- Phase IA: Year 2020:**
10.0% Growth through 2019 (1.8% growth subsequent)
- Phase IB: Year 2030:**
1.8% Growth
- Phase II: Year 2045:**
1.8% Growth
- Phase III: Year 2065:**
1.8% Growth

STUDENT ENROLLMENT

While the **1.8%** growth marker may seem modest, the overall student numbers could grow rather significantly over 50 years. Although the student head count growth may be high, the first phase of growth can be accommodated within existing capacity available on campus. Currently there is excess capacity in most categories of space including academic space, housing, and student services. Once this space reached a reasonable level of capacity, new space will be needed. The current mix of traditional (typically daytime students) and nontraditional students (more often afternoon or evening students) ensures that as a whole the campus is well utilized across the full day. Although there are exceptions in every facility depending on the program, as a whole once student growth fills existing capacity it is expected that this will apply broadly across all hours of the day.



Student enrollment is described in two forms, total headcount and full time equivalent students. The student headcount includes all students on campus, regardless of if they are full time or part time students. Full time equivalent (FTE) is a conversion to normalize for the range of credits that students may actually be taking on campus. As most higher education institutions have a portion of students that are part time, the FTE will always be lower than the actual headcount. For institutions serving primarily traditional students, the headcount will be slightly higher than the FTE count. At USU Eastern, there is a fair mix of traditional and non-traditional students, so the FTE count is slightly lower than most residential campuses. As of 2014, the headcount at USU Eastern was approximately 1600 and the FTE was 1100, just under 69%. For planning purposes, this plan assumes that this ratio will stay approximately the same over time. While this ratio is not guaranteed, current USU Eastern Policy does not anticipate that the mix of students will have a significant change.

Current FTE Ratio: 68.75%

Future Ratio: 68.75%

For comparison, the USU Uintah Basin campus had an FTE ratio of 43.22% as of 2014. This is a campus that serves primarily non-traditional students during evening hours. Snow College which serves primarily traditional students during daytime hours has a FTE ratio of approximately 78%.

STUDENT SERVICES

Currently the Price Campus offers certain services that are highly valued by all students on campus. These include food service, a campus book store with limited retail, recreation facilities, a library, and housing. These services are primarily required for full time traditional students (most notably housing), but all students may find them valuable. It is expected that these services will continue to be a valuable component of USU Eastern's operations and thus they are maintained in the scenario planning for campus growth. In the longer term planning horizons they are expanded to meet the needs of

campus growth. The student center, library, recreation center, and housing facilities all have suggested expansions by the final phase of the plan in 2065. This growth will serve the growing campus population as well as a larger on campus housing population. Although the FTE ratio is expected to remain fairly constant on campus, there is a goal to increase the number of students who live on campus. Currently the housing facilities are not fully occupied, thus there is capacity to support this goal. For planning purposes the plan also anticipates adding housing to attract students from outside the Carbon County area. Currently about 20 of the campus physical space is attributed to housing. The long term planning horizon increases this ratio over time.

Current Housing SF Ratio: 20%
Phase I Housing SF Ratio: 20%
Phase II Housing SF Ratio: 25%
Phase III Housing SF Ratio: 30%

CAMPUS POPULATION & GROWTH

As the student population grows, the overall campus population will also grow. Additional faculty, staff, and administration personnel will be required to support the student population. For planning purposes, a ratio of faculty and staff has been applied to all planning phases. Currently there are approximately 200 faculty and staff on campus, including full time and part time employees. For every 100 FTE there will be 1.9 faculty/staff, or 19% ratio. **An assumption has been made that the ratio of faculty/staff to students will drop slightly in each phase.** Some student growth will occur without adding additional administration. This ratio is important primarily to calculate the campus parking requirements. Faculty and staff space requirements for structures is included in the FTE SF ratio. The following campus population numbers have been calculated, with the faculty/staff ratio dropping to 0.13% in 2065: With a growth rate of 1.8% selected

	BASELINE 2015	PHASE 1 2020	PHASE 2 2045	PHASE 3 2064
Headcount Projected Enrollment	1,600	2,385	3,725	5,322
FTE Projected Enrollment @ Target FTE Ratio	1,110	1,639	2,561	3,659
Faculty & Staff Ratio, Assumption	0.19	0.17	0.16	0.13
Faculty & Staff Count, Calculated	204	279	410	457
Total Projected Population, Calculated	1,804	2,663	4,135	5,780

for planning purposes, an overall student growth rate can be determined. In 2015 the USU Eastern Price Campus student headcount was approximately 1600 students. The following headcounts may need to be accommodated in each phase if growth increases at the 1.8% projection:

Phase I: 2,385 Students
Phase II: 3,725 Students
Phase III: 5,322 Students

In most cases, campus planning is based on Full Time Equivalent Students. In 2015 the FTE equivalent at the USU Eastern Price Campus was 1100 students, or approximately 68.75%. For planning purposes it is expected that this ratio will remain steady. Should this assumption not take place, the growth in campus facilities will not increase as quickly as projected.

Baseline: 1,100 Students
Phase I: 1,639 Students
Phase II: 2,561 Students
Phase III: 3,659 Students

The purpose of the student growth analysis is to determine how much physical space the campus will need to serve the potential students that may be expected in the future. The actual space available per student is approximately 438 gross square feet per full time equivalent students. This number is expected to drop over time as this number is higher than campus peers in the region. As there is additional space available, in the short term, some student growth can be accommodated without adding significant space on campus. However in time, growth will result in the need to grow campus facilities.

Baseline: 438 GSF/FTE
Phase I: 375 GSF/FTE
Phase II: 290 GSF/FTE
Phase III: 230 GSF/FTE

Currently, there is a mix of traditional and nontraditional students that utilize campus. Traditional campuses often have utilization of buildings between 8am and 2 or 3pm. Non-traditional students often are on campus later in the afternoon and during evening hours such as between 5 and 8pm (depending on the specific class schedule). Thus, the campus is able to serve more students across the day. This factors into the utilization of the space on campus. With the high GSF ratio, and mix of students on campus across the day, there is ample room for student growth.

For comparison, Snow College in Ephraim Utah currently offers approximately 365 GSF/FTE, while offering modest on-campus auxiliary services for its higher full time ratio of traditional students. A larger institution, Colorado Mesa University in Grand Junction, Colorado, currently offers approximately 435 GSF/FTE. CMU offers a fully developed range of auxiliary services including a full recreation program, athletics program, housing, modest conference space and food service activities. USU Eastern is not expected to outpace CMU, and is not anticipated to require the same level of on campus services.



Non-traditional students have specific space requirements including childcare and evening classes

USU Eastern is more likely to have a profile closer to that of Snow College. However, keeping a mix of evening students will allow more turnover of classroom space. Thus, a forecast of 230 GSF/FTE has been forecasted for the USU Eastern Price Campus Phase III build out.

Additional metrics have been developed to guide the development of site related amenities such as parking, open spaces, and landscaped areas. These metrics vary greatly by each campus based on property available, adjacent uses, and resources to maintain facilities. For future planning general metrics have been developed to determine how much space may be required to accommodate all that is required to support USU Eastern. This aspect of the planning is outlined in more detail in the phasing discussion in Chapter 4 of this document. Based upon the previous outlined metrics, the following total square footage is expected to exist on the Price Campus in each phase. More information about each phase is outlined in Chapter 4 of this document.

Baseline: 505,000 GSF
Phase IB: 614,000 GSF
Phase II: 740,000 GSF
Phase III: 830,000 GSF

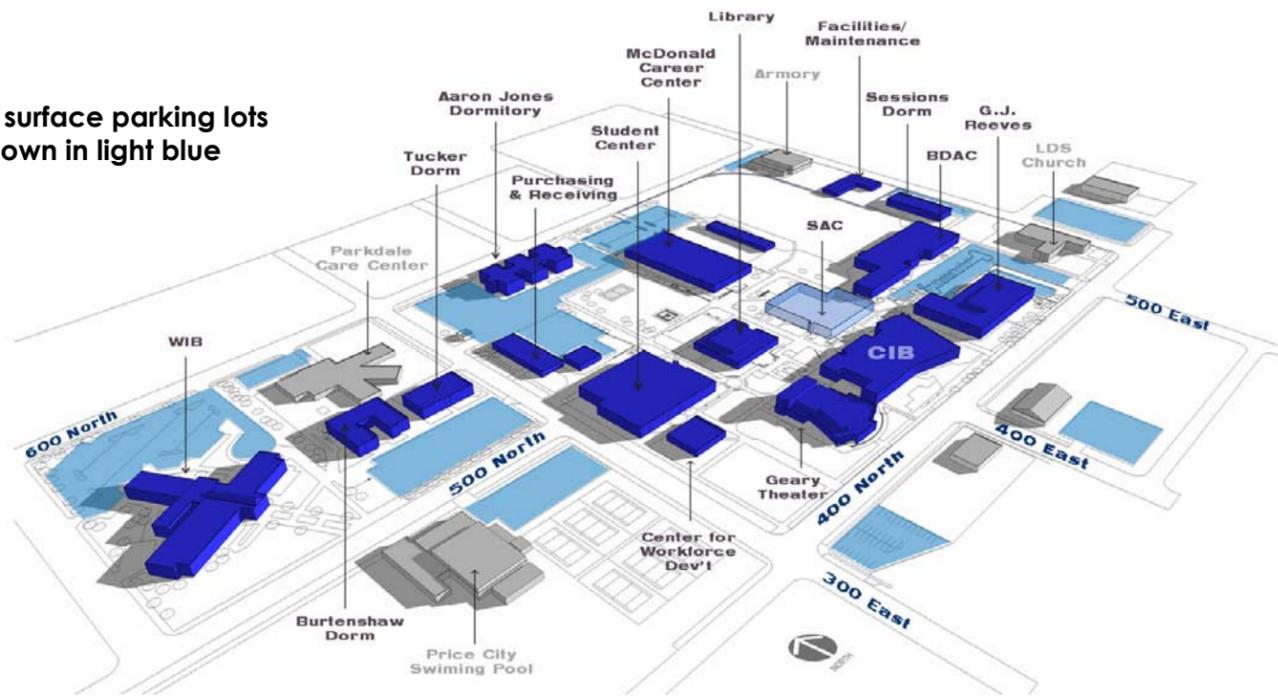
For planning purposes, this square footage will primarily be developed within 2 story structures in the first two phases. By final build out it is expected that 3 story buildings will be utilized on campus. Academic buildings will follow this pattern. Other structures that may not suit this pattern, such as recreation facilities, may be developed as needed.

PARKING

Currently there is approximately 4 parking stalls per 1000 square feet of gross square footage on campus. This equates to 0.60 stalls per person on campus (using total campus population). The future campus plans reduce this ratio, assuming more students will live on campus or arrive by means other than by car. The plan also assumes that some student growth can occur without the need to add administration and staff to campus. The recommended parking ratio from the ITE Parking Generation Manual is 0.18 to 0.25 stalls per person. The following ratios have been planned for the USU Eastern Campus. See page 32 for information on existing parking.

Baseline Parking Ratio:	0.63%
Phase I Parking Ratio:	0.34%
Phase II Parking Ratio:	0.31%
Phase III Parking Ratio:	0.21%

Major surface parking lots are shown in light blue



OPEN SPACE

Generous usable open space exists at the USU Eastern Price Campus in the form of turf fields. They are heavily used by students for informal recreation, intramural recreation, and formal athletics. USU Eastern's athletic programs are growing and will remain an important part of the campus life and identity. The campus master plan seeks to preserve the open space asset on campus. The current ratio of open space will not necessarily be maintained on campus. Due to space limitations, student growth will need to occur without maintaining the current ratio. To offset some of the loss of open space that will occur by adding parking and academic structures, a roof top formal soccer field has been identified on the plan, allowing parking to occur underneath.



MASTER PLAN PROCESS - Public Involvement

EXECUTIVE COMMITTEE MEETINGS

An Executive Committee was created by USU Eastern to steer the Master Planning process. This committee provided visionary, tactical and technical oversight to the CRSA consulting team. The committee consisted of the following individuals:

Joe Peterson, *Chancellor*
Peter Iyere, *Vice Chancellor*
Greg Dart, *Vice Chancellor*
Melanie Nelson, *Associate Vice Chancellor*
Eric Mantz, *Associate Vice Chancellor*
Sheila Burghardt, *Facilities Director, USU Eastern*
Kyle Willis, *Operations Maintenance Supervisor*
Jordy Guth, *Assistant Director, Facilities & Planning, USU*
Ben Berrett, *Director, Planning and Design & Construction*
Thomas Graham, *Architect*
Jim Huppi, *Landscape Architect*

The Committee met with the CRSA team regularly during the process and was instrumental in fashioning the Plan from concept development through to the final document. Other reviewers from USU Central also gave their input on the Plan especially with regards to utilities.



Executive Committee kickoff meeting, Nov 5, 2014

FOCUS GROUPS

One critical component of a master planning process is the identification of the needs of various user groups. The use patterns of current user groups will have to be identified as well as future needs that have to be met. To ensure that the voices of various groups were heard in this process, a number of focus group meetings were held on the Price campus. The groups that met with the CRSA team were as follows: Faculty, Enrollment, Facilities, Athletics & Recreation, Housing & Auxiliary Services, Students, Community Outreach

VISIONING WORKSHOP

An advisory committee was formed that comprised of representatives from USU Eastern, USU Central, Price City representatives, Carbon County representatives, Price community representatives etc. This committee was engaged in visioning exercises to come up with a collective vision, and to identify key values for the master plan. A graphic that shows the key values for the plan as generated in this meeting can be found on page 22.

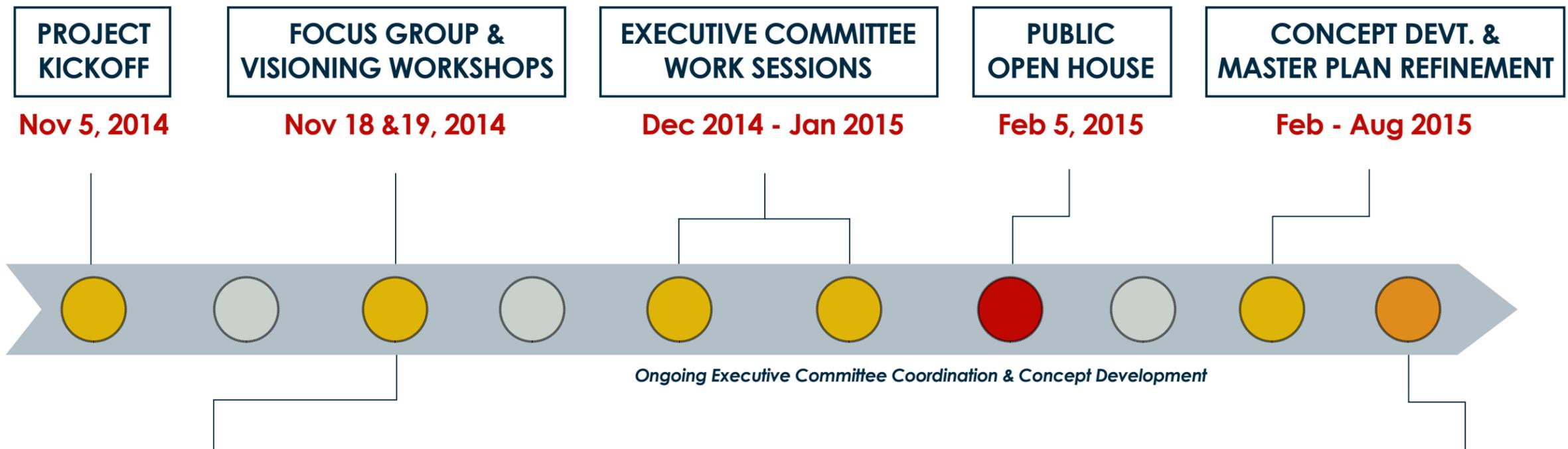
PUBLIC OPEN HOUSE



Open House participants

An Open House was held on February 5, 2015 to showcase the concept plans and to provide more insight about the process to the public. This was a good opportunity for the CRSA team and the Executive Committee to interact with students, staff, faculty and the general public and to answer questions about the master planning process. Display boards that were used for the open house were mounted at different locations around the campus to reach more people. The display boards can be found on page 114.

TIMELINE



February 2016

FINAL DELIVERABLES



Focus Group & Visioning Workshops

Executive Committee Work Sessions

MASTER PLAN PROCESS - Public Involvement

STUDENT BEST & WORST PHOTOS

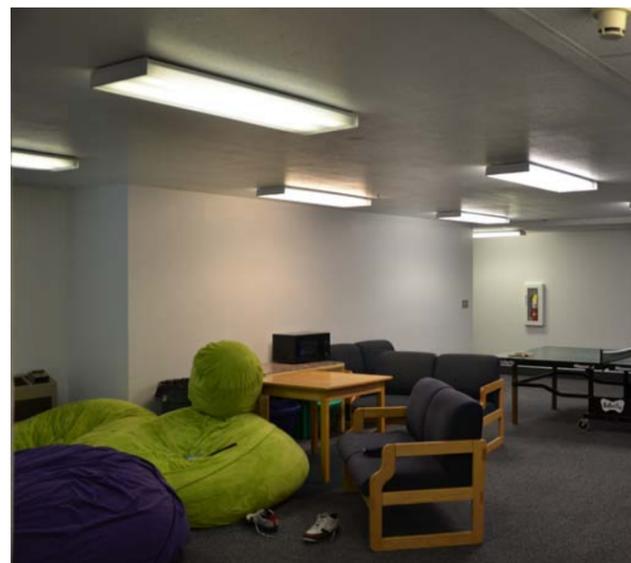
Students were tasked to electronically send in photos that represented their best and worst places on campus.



Students best places on campus included the Golden Grille cafeteria area in the Student Center and the area around the fountain to the north of the library and plaza



A couple of the worst places are shown in the photos below



PLANNING PRIORITY CARDS

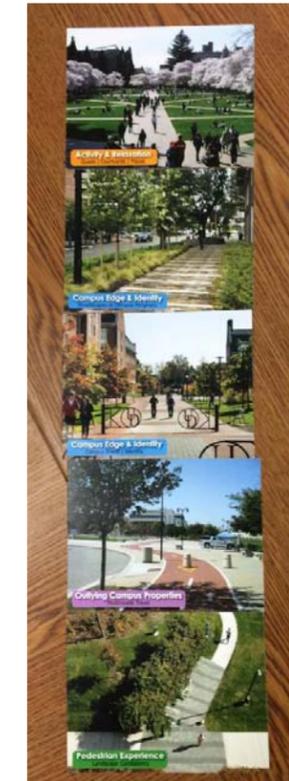
Different user groups on campus were asked to organize planning priorities for the campus based on the following categories: Activity and Relaxation; Pedestrian Experience; Campus Edge & Identity; Outlying Campus Properties; Architectural Framework. Some individual responses are below:



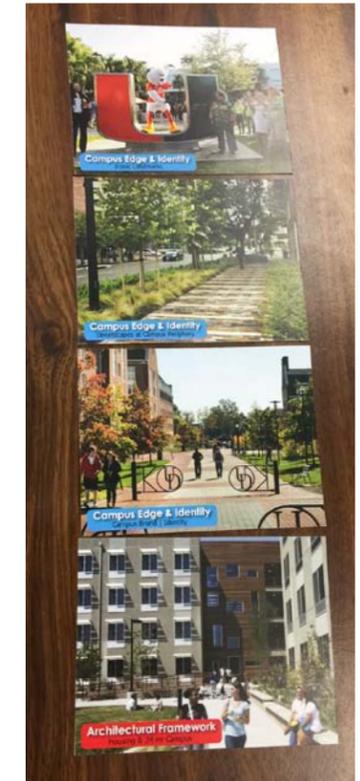
Exec. Committee Member



Faculty



Staff

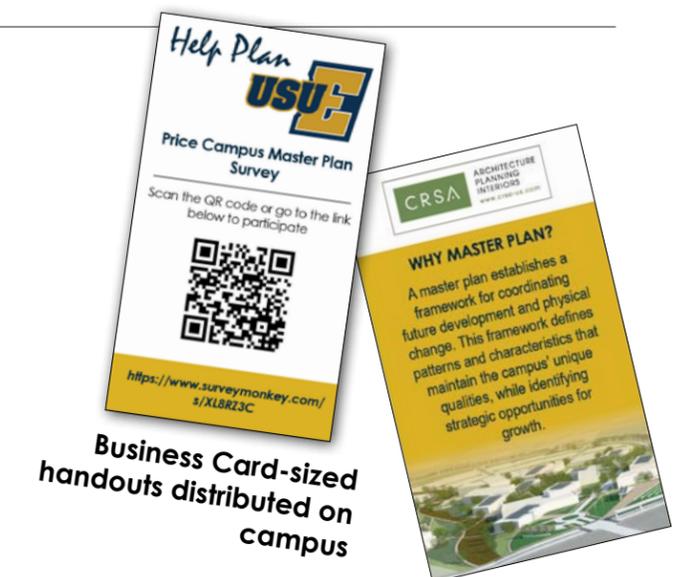


Student

Activity & Relaxation was high on the priority list of most user groups and individuals. This was closely followed by Campus Edge & Identity and Pedestrian Experience.

PUBLICITY BOARD & HANDOUTS

Board placed at high traffic areas on campus





Red - Students
 Blue - Staff
 Yellow - Faculty
 Green - Community

regional natural resource gathering

expression of sustainable systems



what is your vision for the USU Eastern Price Campus?



The above panel shows a board that was displayed on campus for input. The images displayed were examples of different campus spaces. Campus users were asked to vote with dots for the spaces and characteristics they most preferred. Different colors were assigned to various campus groups as follows:

- Red - Students
- Blue - Staff
- Yellow - Faculty
- Green - Executive Committee

All campus users seemed to gravitate towards photos that showed ample open space that had been programmed with multiple experiences: plazas, malls and green spaces. Lounges, and multipurpose spaces in buildings were also desired.

4 images representing the key values of the Plan

SERVICE
HISTORY
CONNECTIVITY
PARTS OF A WHOLE
STRENGTH
COLLABORATION
COMMUNITY CONNECTION



ROOTS
STRENGTH
HISTORY
ADVERSITY



ADVERSITY
HISTORY
STRENGTH
TRANSFORMATION

GROWTH
NURTURE
POSSIBILITY
FUTURE

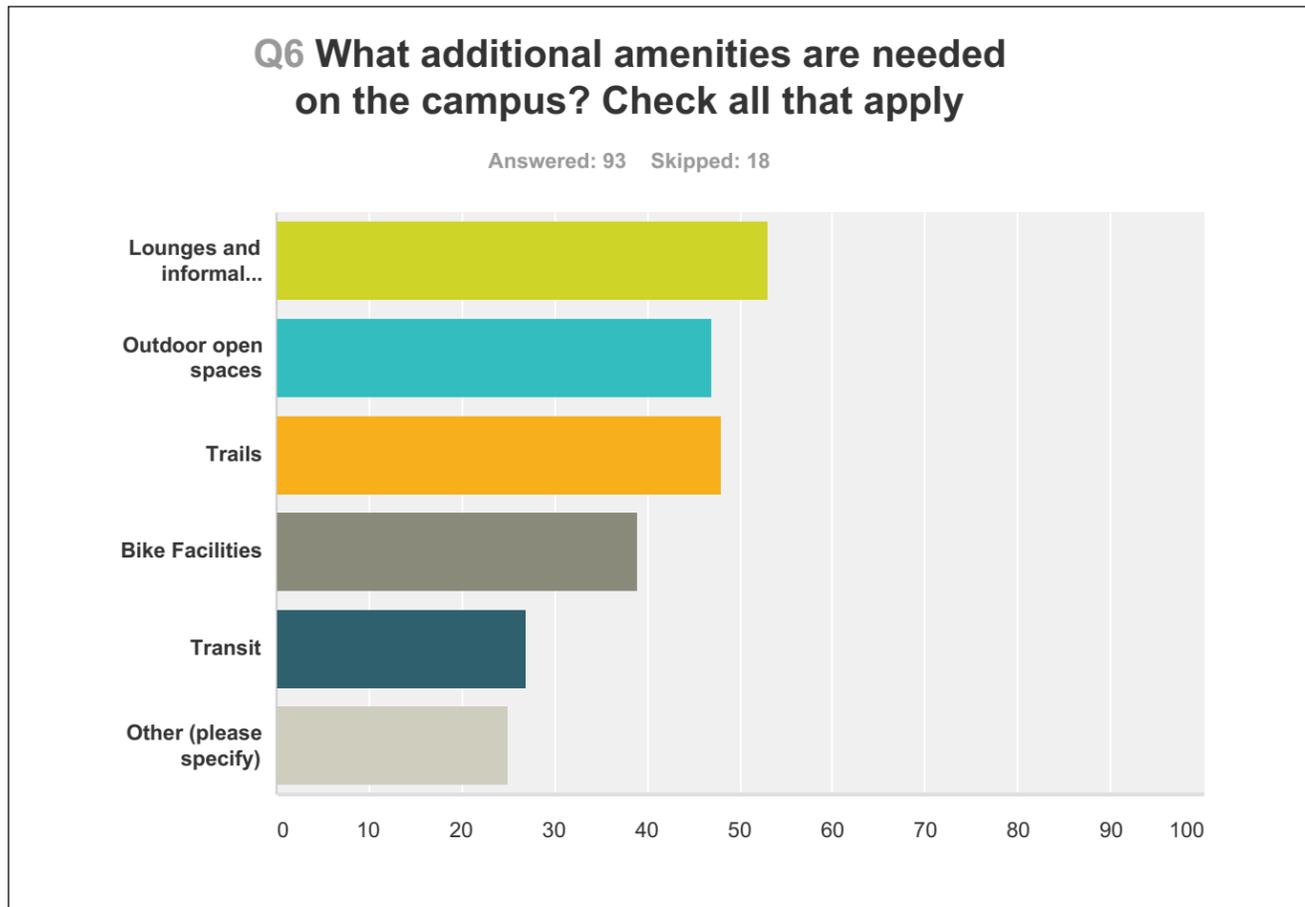
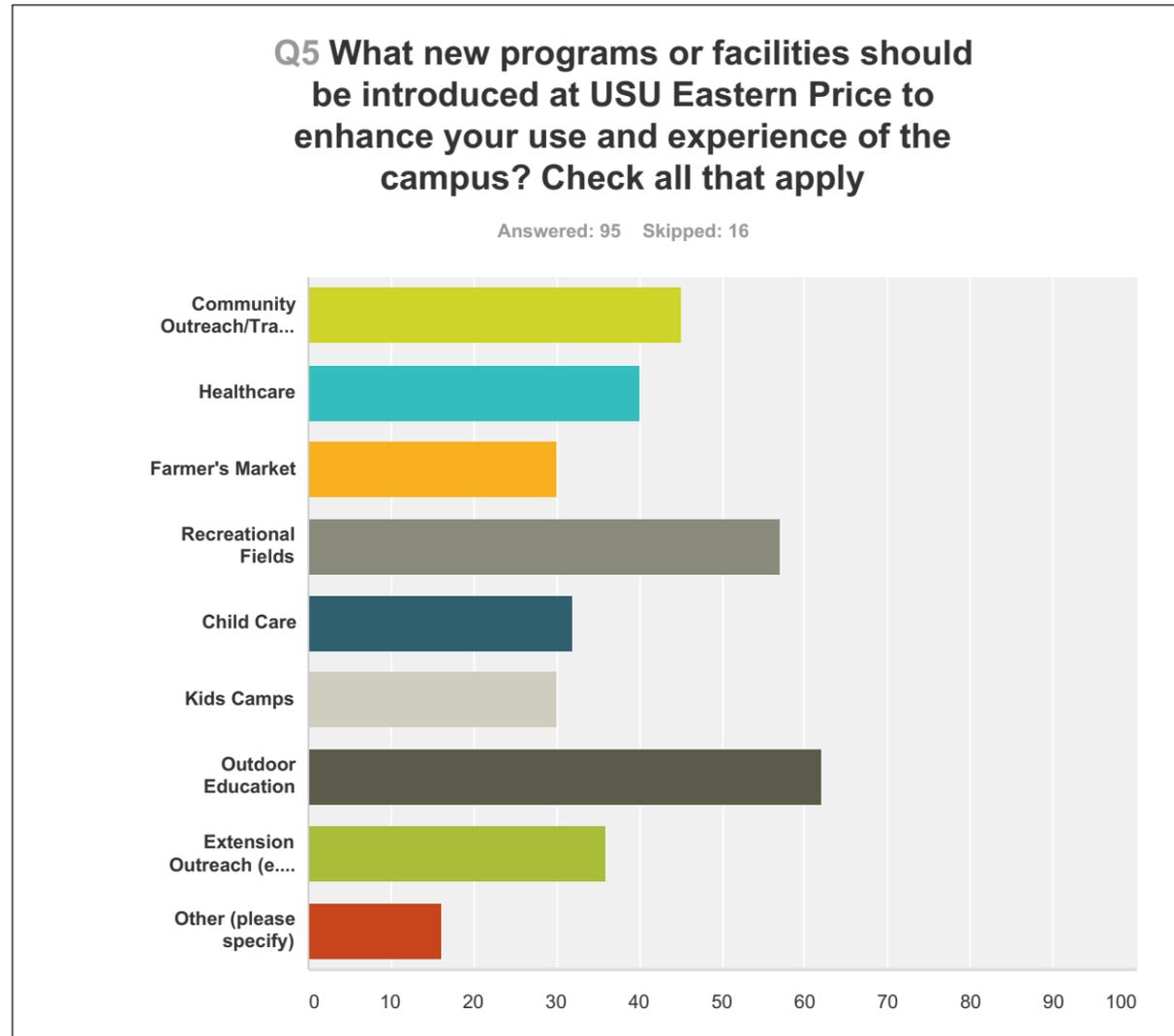
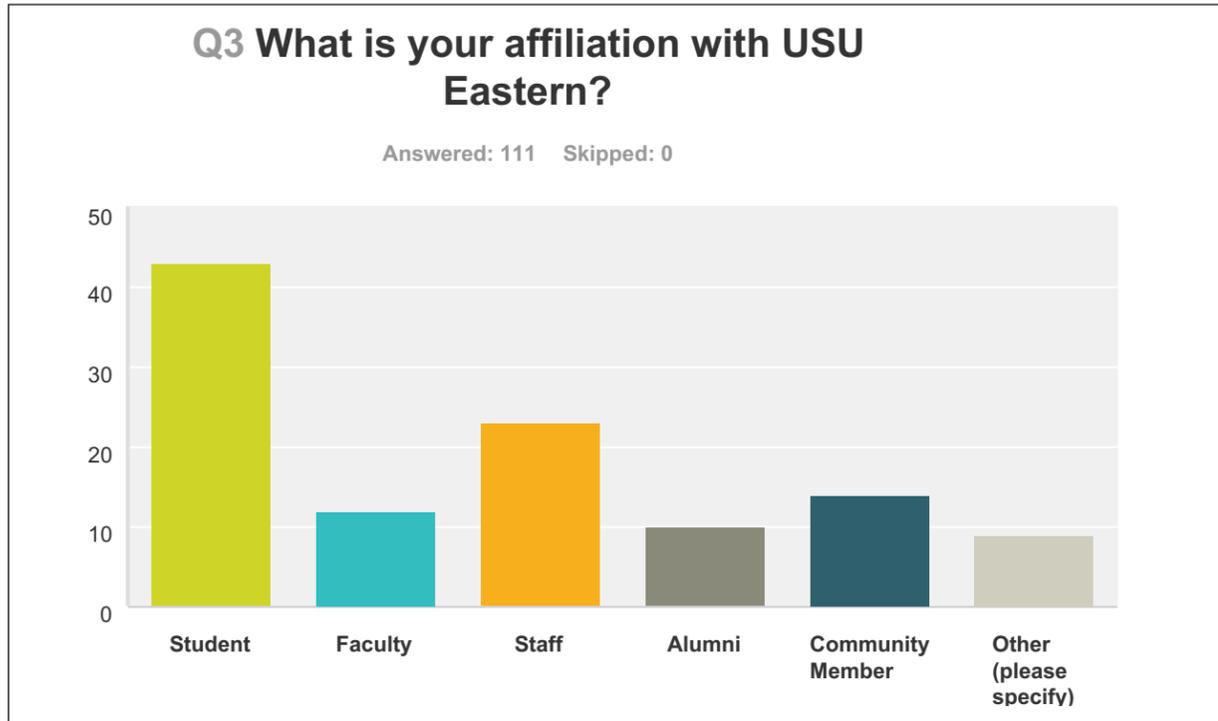


VISION
ASPIRATION
DEDICATION
GOAL SETTING

ACHIEVEMENT
ADVENTURE
PERSPECTIVE

SURVEY

An online survey was held on the online *SurveyMonkey* Platform to solicit input on the master plan concepts and also to learn more about the use patterns and needs of campus user groups. The survey was open for two months from 02/05/2015 until 04/06/2015. There were 111 total responses to the survey. Respondents were placed in a draw for an *Ipad*. The survey, like the other public involvement tools, was very important in identifying future needs of the campus users. A summary of some of the results of the survey are shown below. More details are available in Appendix D of this document on page 144.

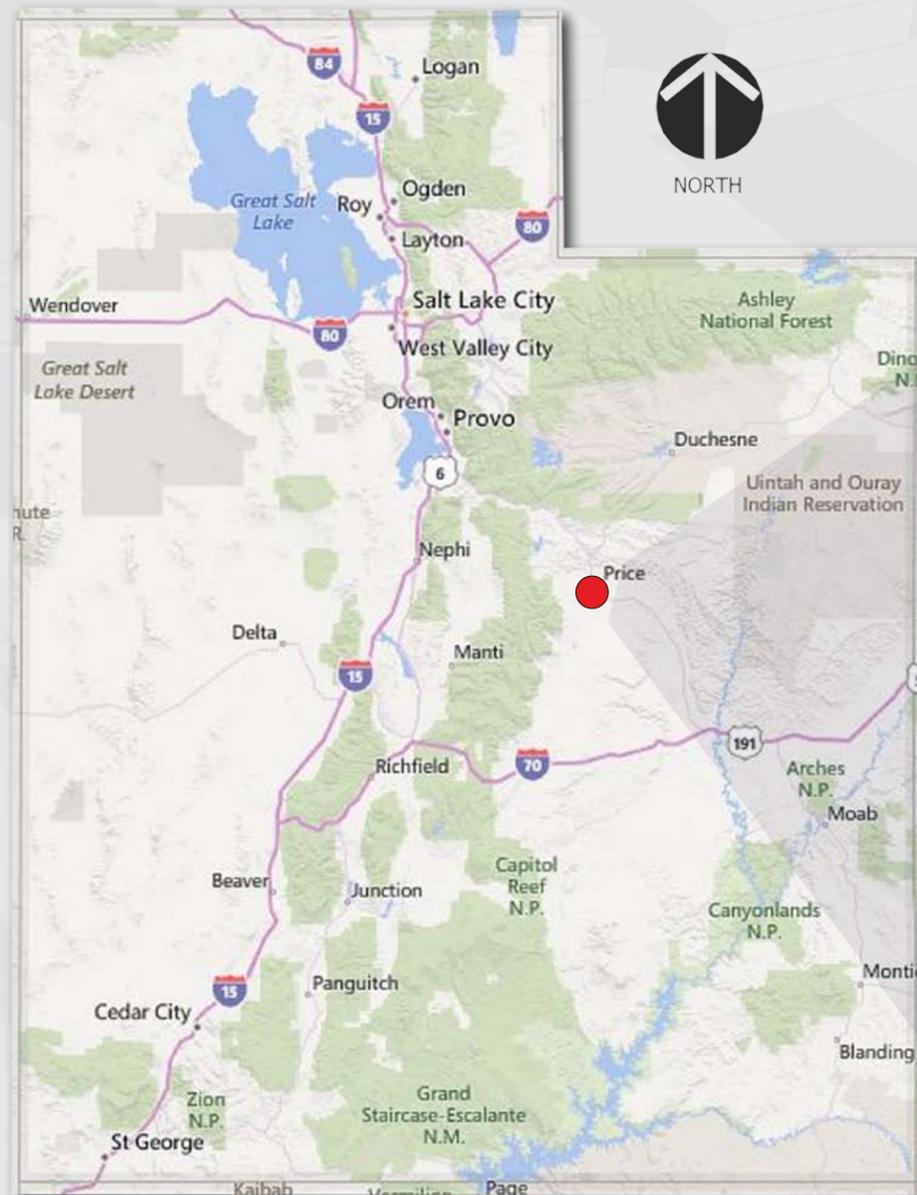




3. site analysis

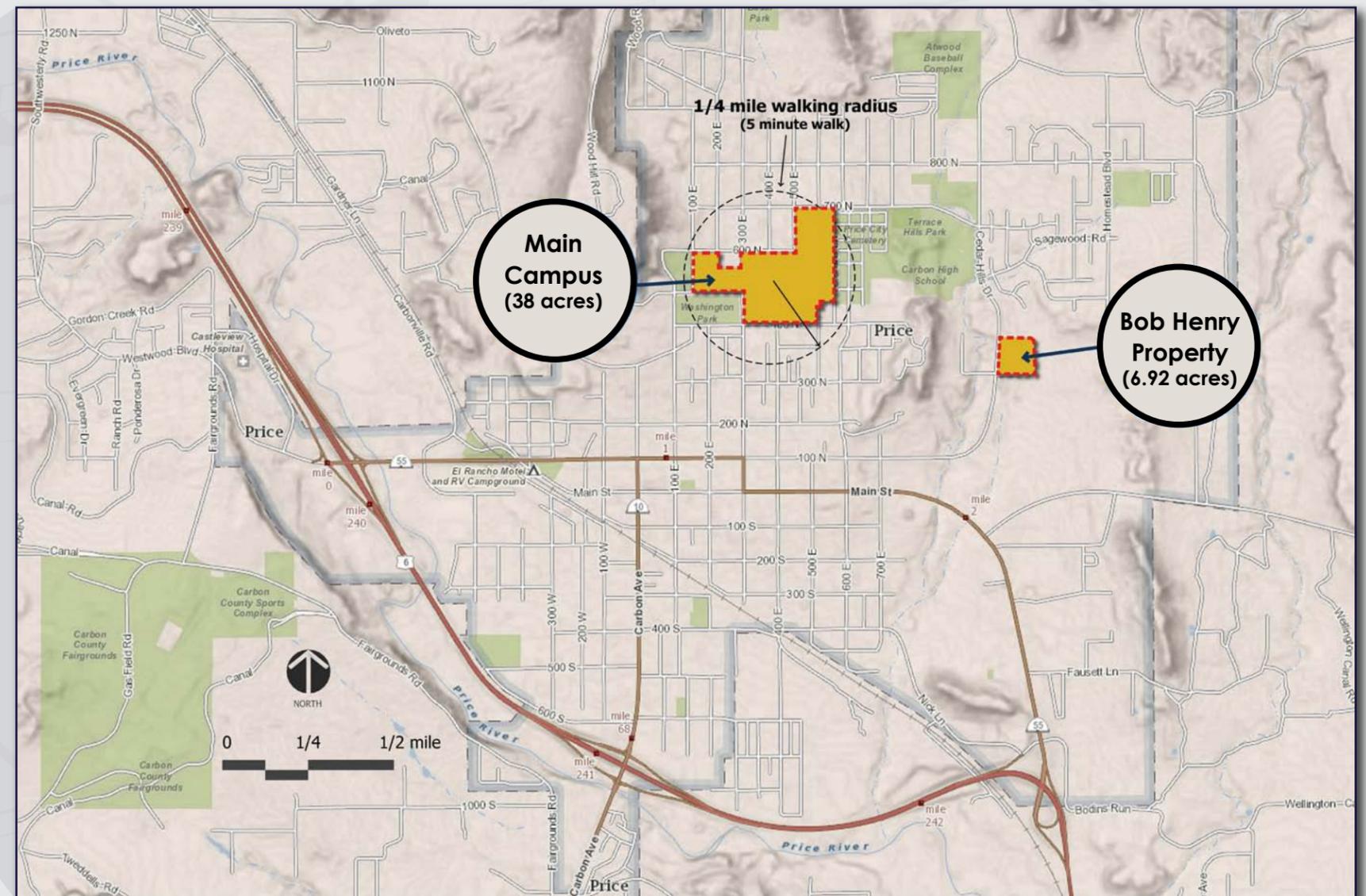
SITE LOCATION

USU Eastern's Price Campus is located in the City of Price, Carbon County, Utah.



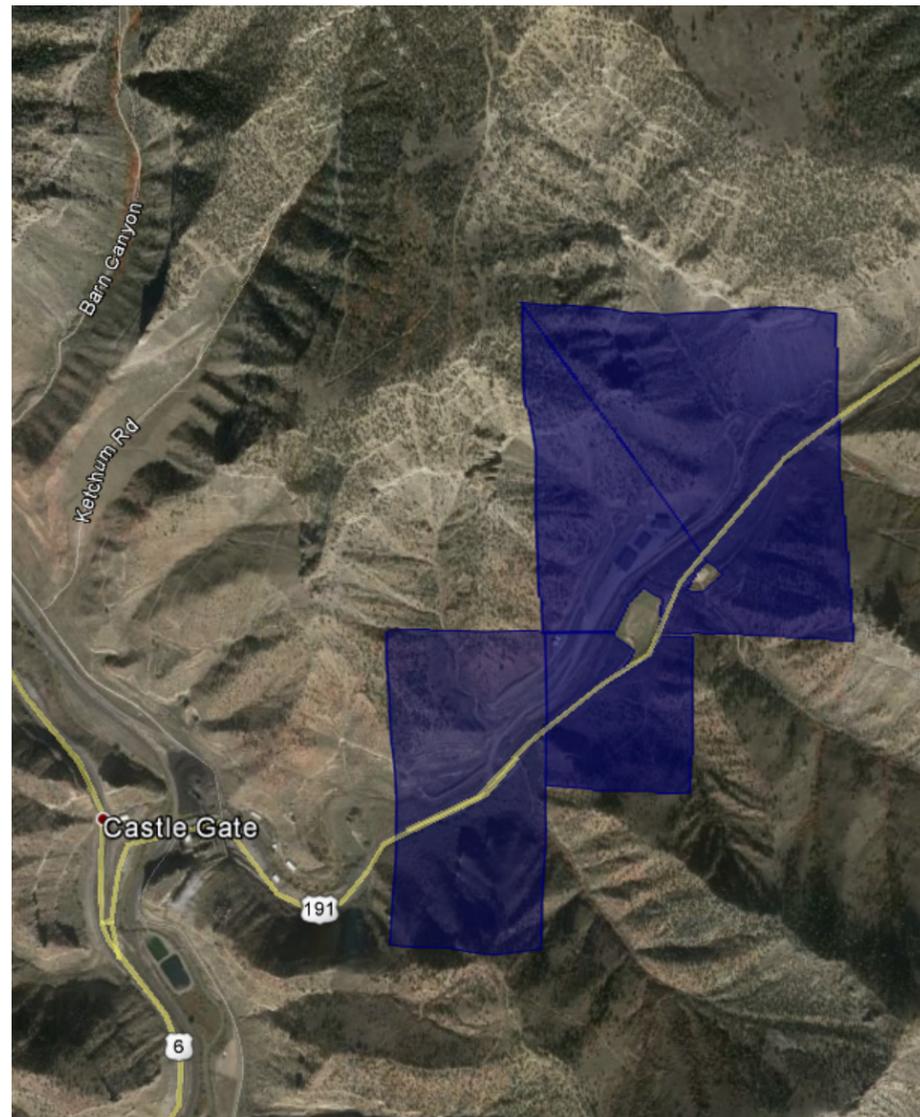
The main campus in Price is located on a 38 acre parcel and is generally flat. The campus is located in a built up area and is surrounded by homes, institutional and public uses. The campus can be accessed by through all bounding roads by vehicular and pedestrian traffic.

A 6.92 satellite parcel (with the potential of growing to 25 acres) is located about 1/4 mile from the main campus.



OTHER USU PARCELS IN PRICE

USU Eastern owns other parcels of land in the vicinity of Price City. These off-campus sites are not being considered for planning within the scope of this Master Plan. However it is good to know that these parcels are available as the Campus plans for future growth.



Carbon Energy Innovation Center (CEIC) 280 acre property



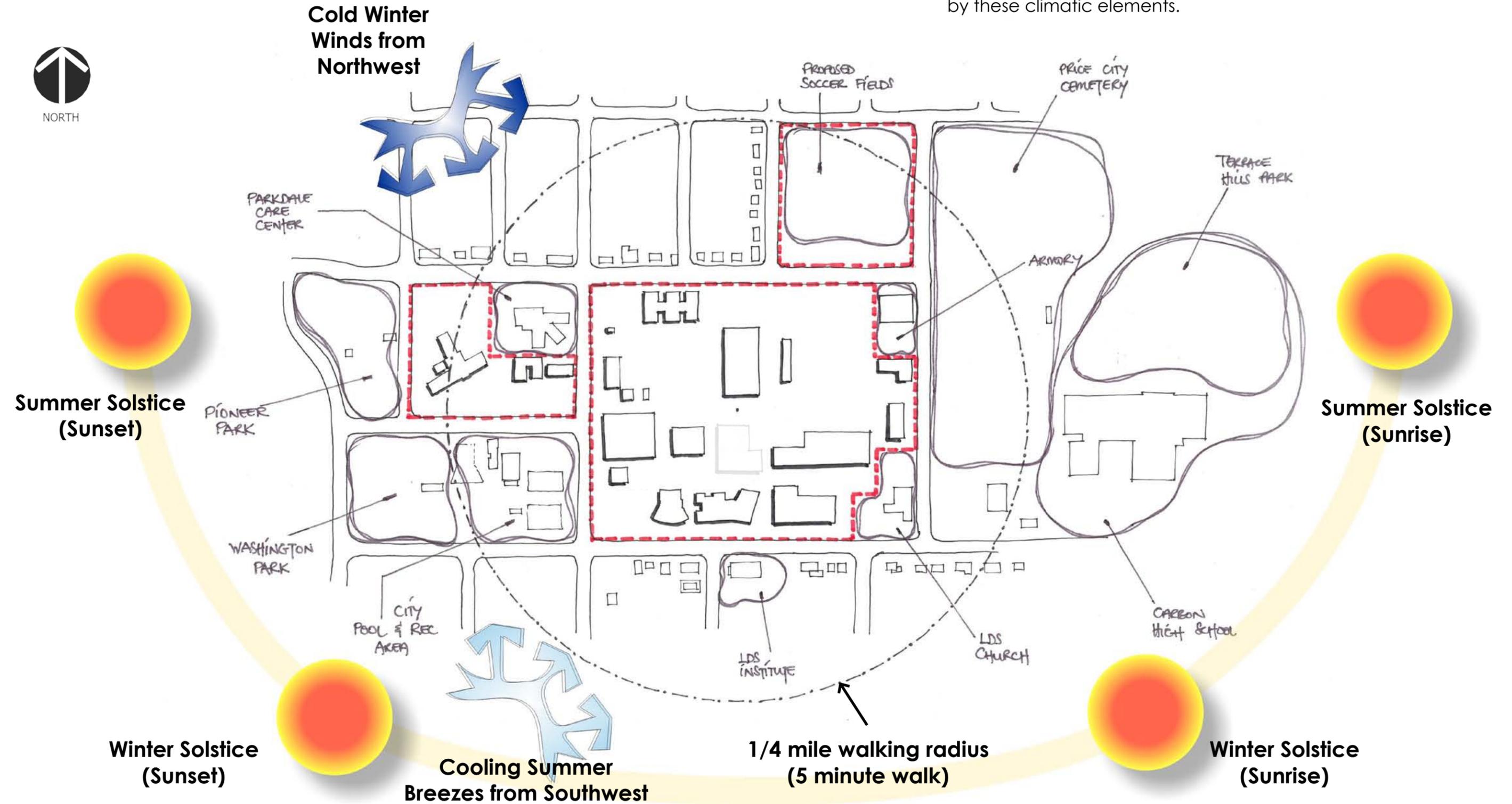
Trucking and Heavy Equipment/Industrial Park Training Property 6.9 acres



480 acre property in background

SOLAR & WIND DIAGRAM - Main Campus

Understanding the campus layout with respect to the solar arc and prevailing winds is important as campus corridors are created and building pad locations are determined. Building form and massing, shading, exposure and building facade treatment are all influenced by these climatic elements.



TOPOGRAPHY



Main Campus

Bob Henry Property

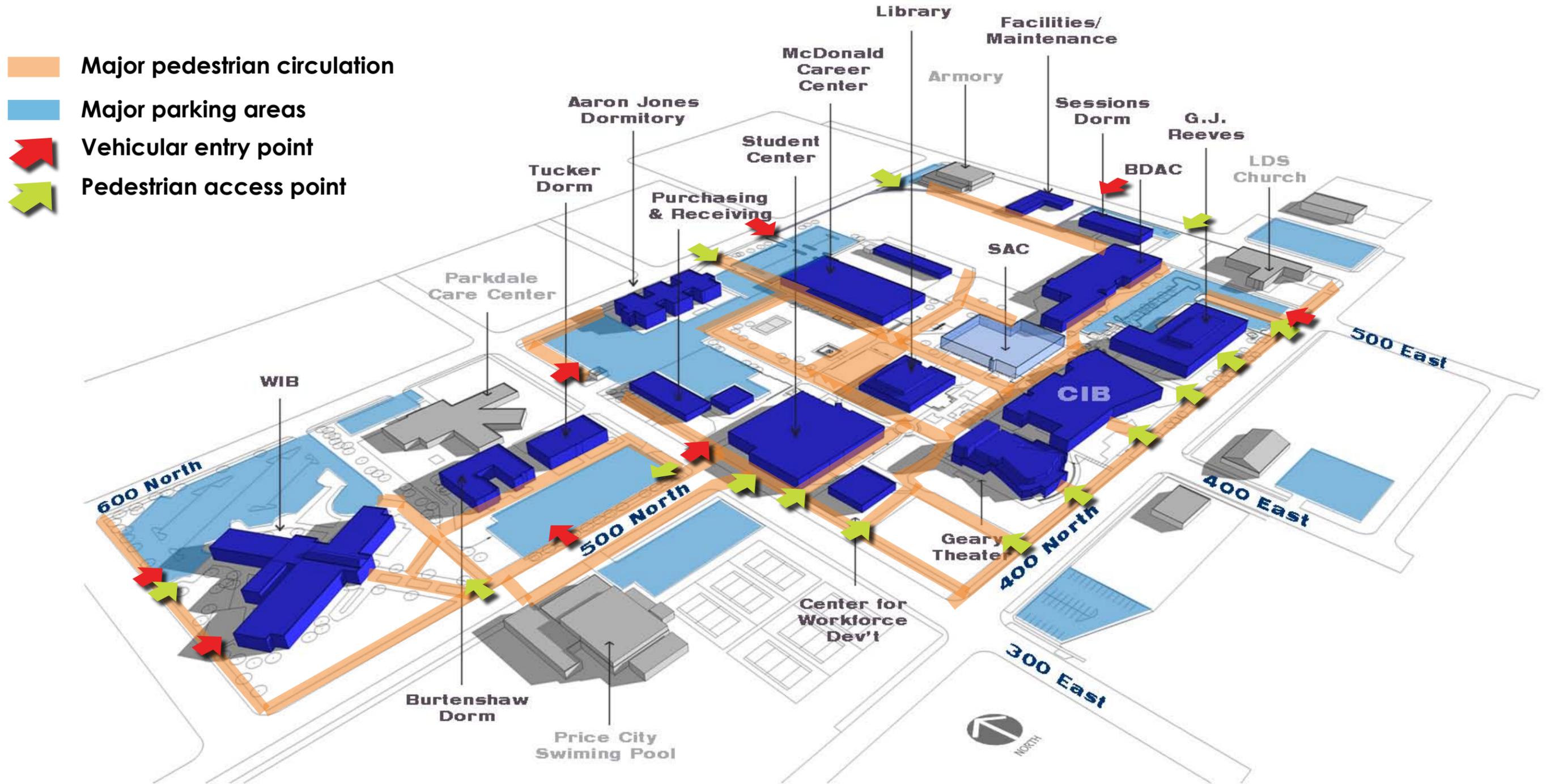


The campus has great views to the Book Cliffs that surround it. It will be important to ensure that there are viewsheds from open spaces and pedestrian malls to these natural vistas. Building placement should also take full advantage of these views whenever possible

Aerial view looking northwest

 **Views to landform**
 **Bluff (Book Cliffs)**

CIRCULATION



TRANSPORTATION - EXISTING CONDITIONS

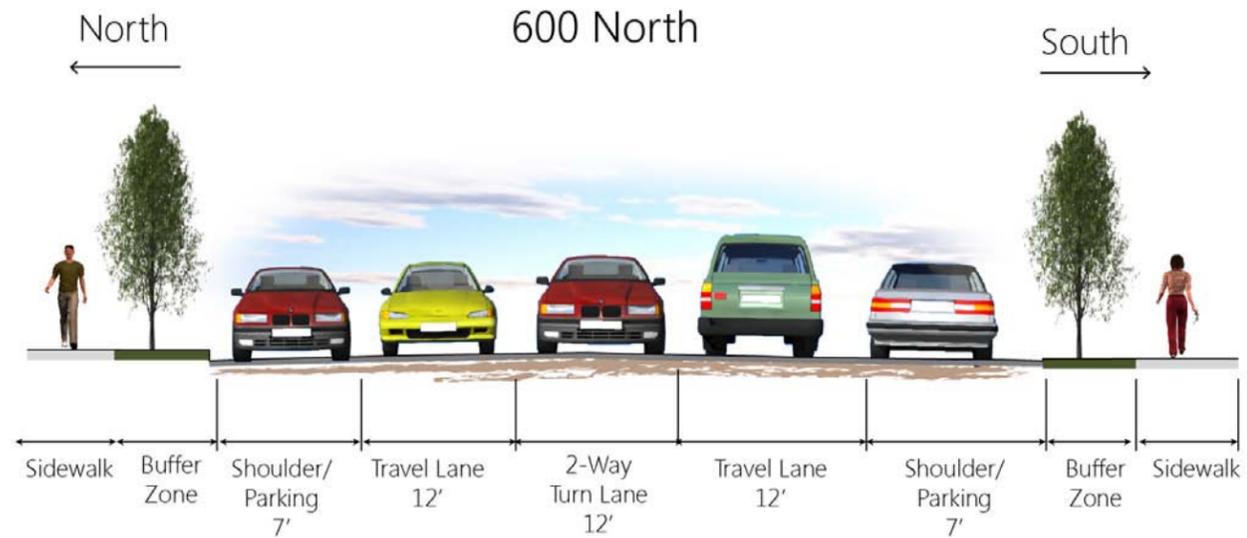
The USU Eastern Campus is located southwest of 600 North and 600 East in Price, Utah.

EXISTING ROADWAYS

The USU Eastern Campus is bordered on the north by 600 North, on the south by 500 North and 400 North, on the east by 600 East, and on the west by 100 East. Other major roads include 300 East that runs through the campus.

600 North

In the project vicinity, 600 North is classified as a major collector between 300 East and 600 East, and a local road between 100 East and 300 East. 600 North is a three-lane road with a Two-Way Left Turn Lane (TWLTL) in the middle and shoulders with on-street parking on each side. The TWLTL drops off to the east of 500 East and to the west of 100 East. Sidewalks are present on both sides.



400 North

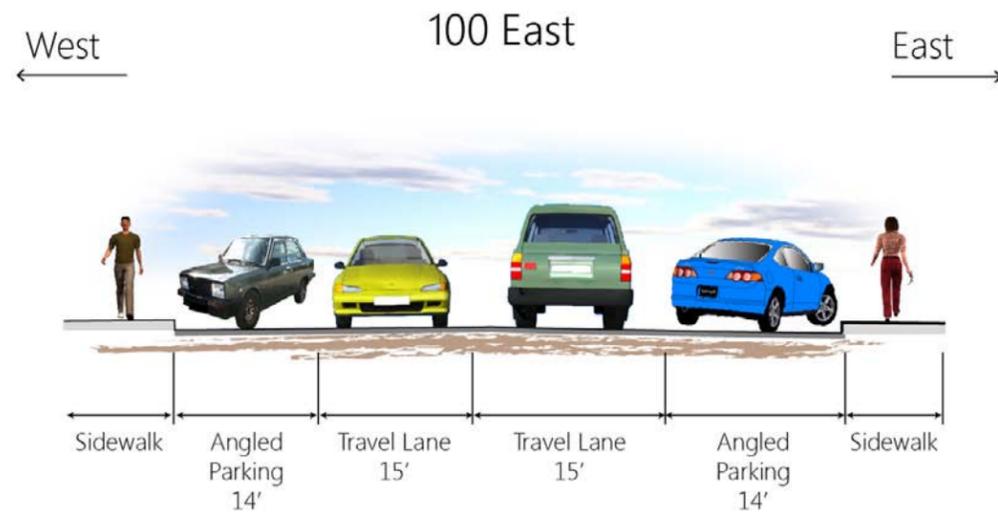
In the project vicinity, 400 North is classified as a major collector. 400 North is a three-lane road with a TWLTL in the middle and shoulders with on-street parking on each side. The TWLTL ends to the west of 300 East. Sidewalks are present on both sides.



Looking east on 400 North. Google Earth street view image

100 East

In the project vicinity, 100 East is a two-lane road with angled on-street parking on each side. Sidewalks are present on both sides of the street.



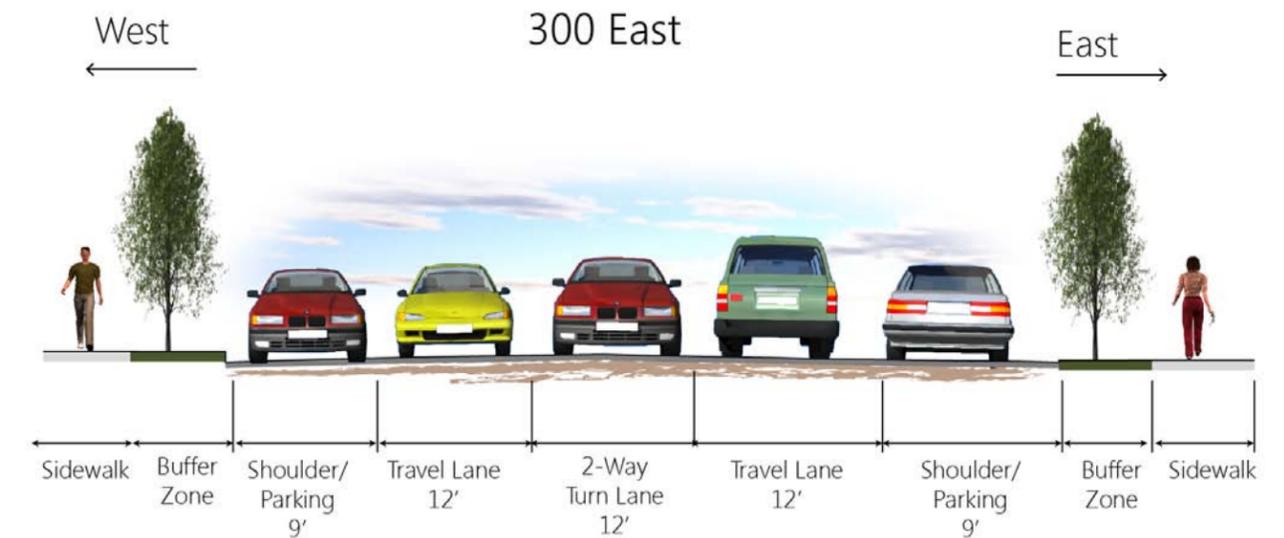
500 North

500 North is a local three-lane road with a TWLTL in the middle and angled on-street parking on each side. Sidewalks are present on both sides of the street.



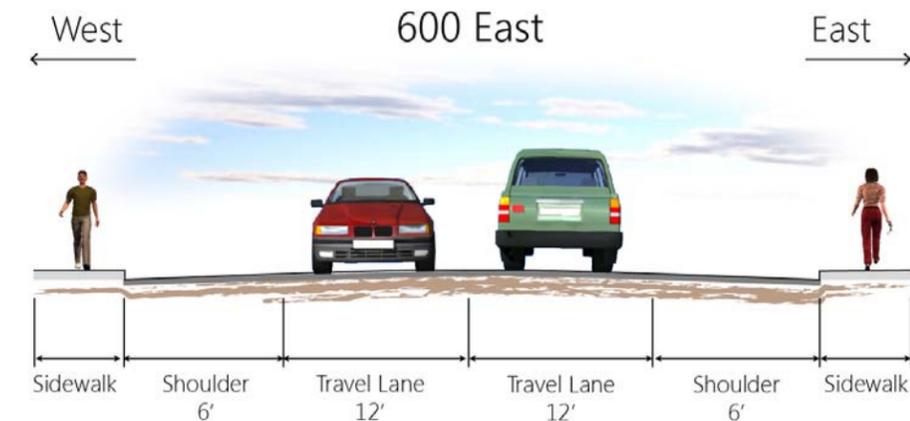
300 East

In the project vicinity, 300 East is classified as a minor arterial. 300 East is a three-lane road with a TWLTL in the middle and shoulders with on-street parking on each side. Sidewalks are present on both sides of the street.



600 East

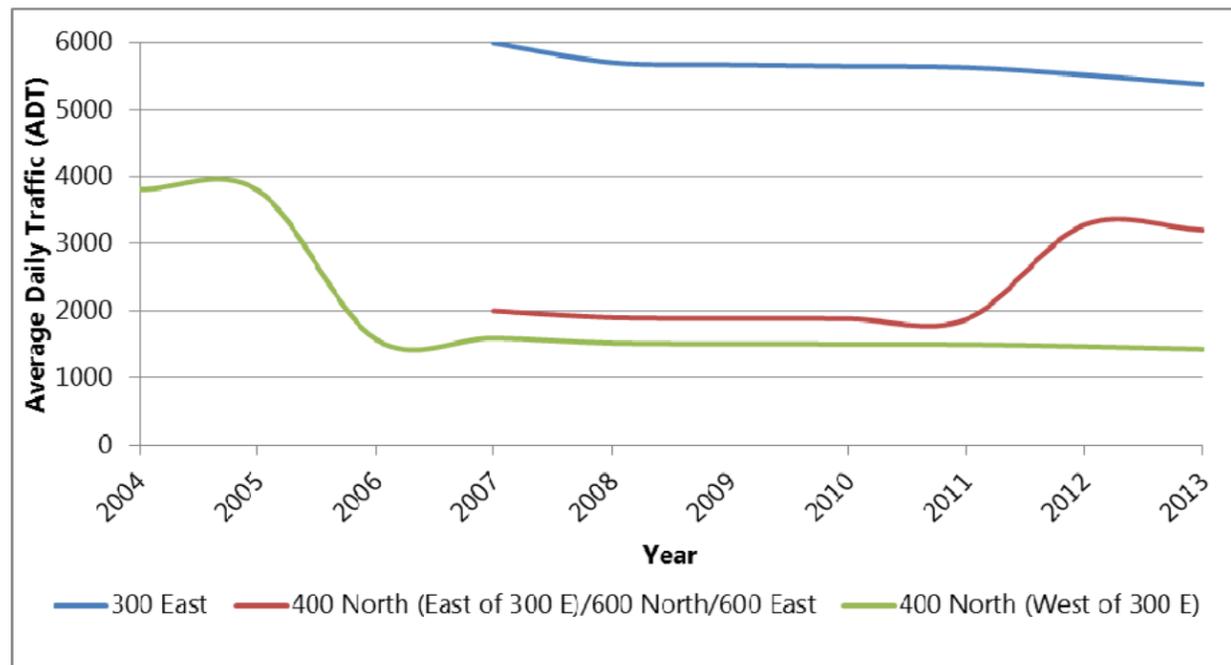
In the project vicinity, 600 East is classified as a major collector. 600 East is a two-lane road with shoulders on each side. Sidewalks are present on both sides of the street.



TRANSPORTATION - EXISTING CONDITIONS Cont'd.

ADT

Average Daily Traffic (ADT) is approximately 3,200 vehicles on 400 North (East of 300 East) / 600 North / 600 East, 5,400 vehicles on 300 East, and 1,400 vehicles on 400 North (West of 300 East) around the USU Eastern Campus (based on 2013 UDOT data). The chart below shows the last ten years of data, according to UDOT traffic counts, for 300 East and 400 North (East of 300 East) / 600 North / 600 East, and 400 North (West of 300 East).

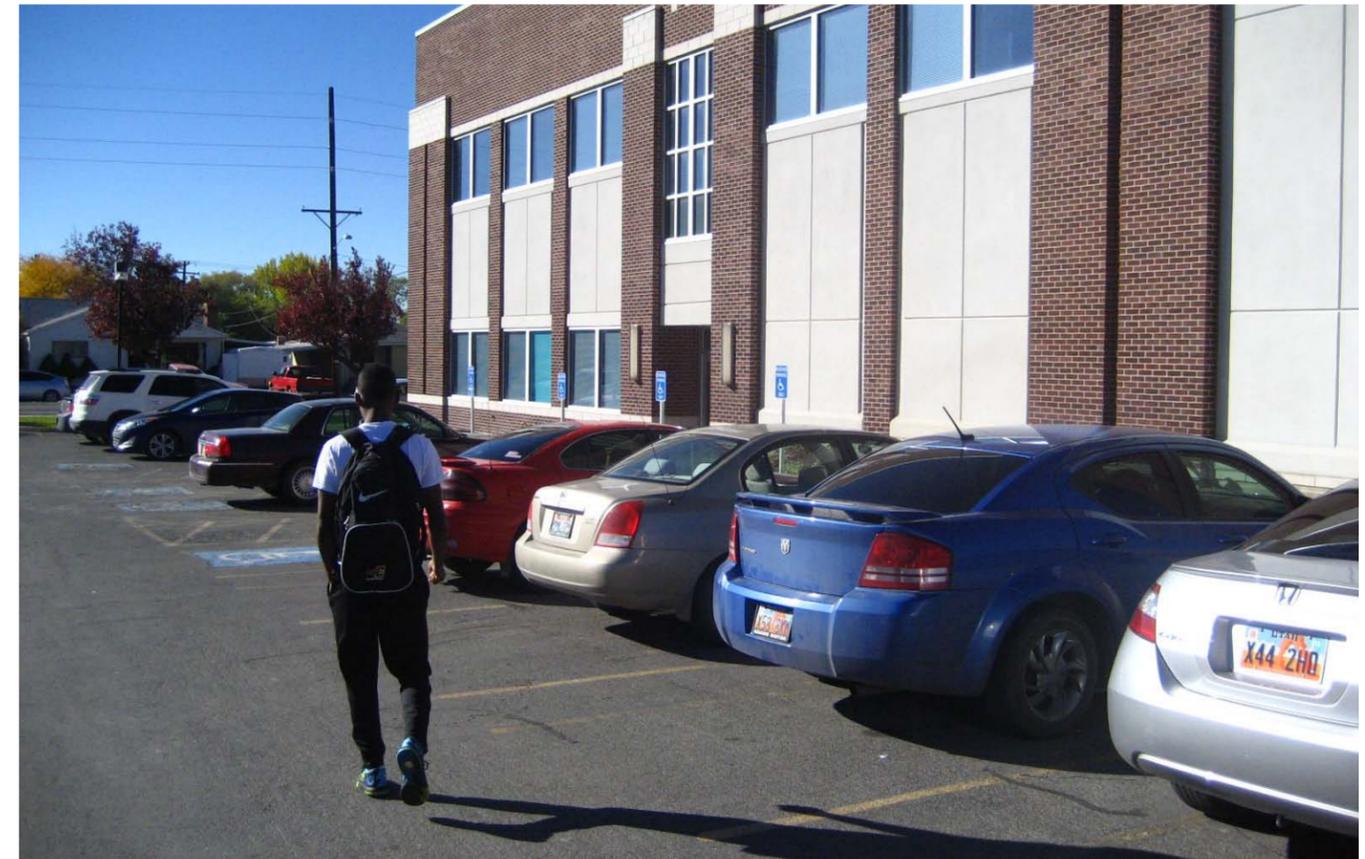


PARKING

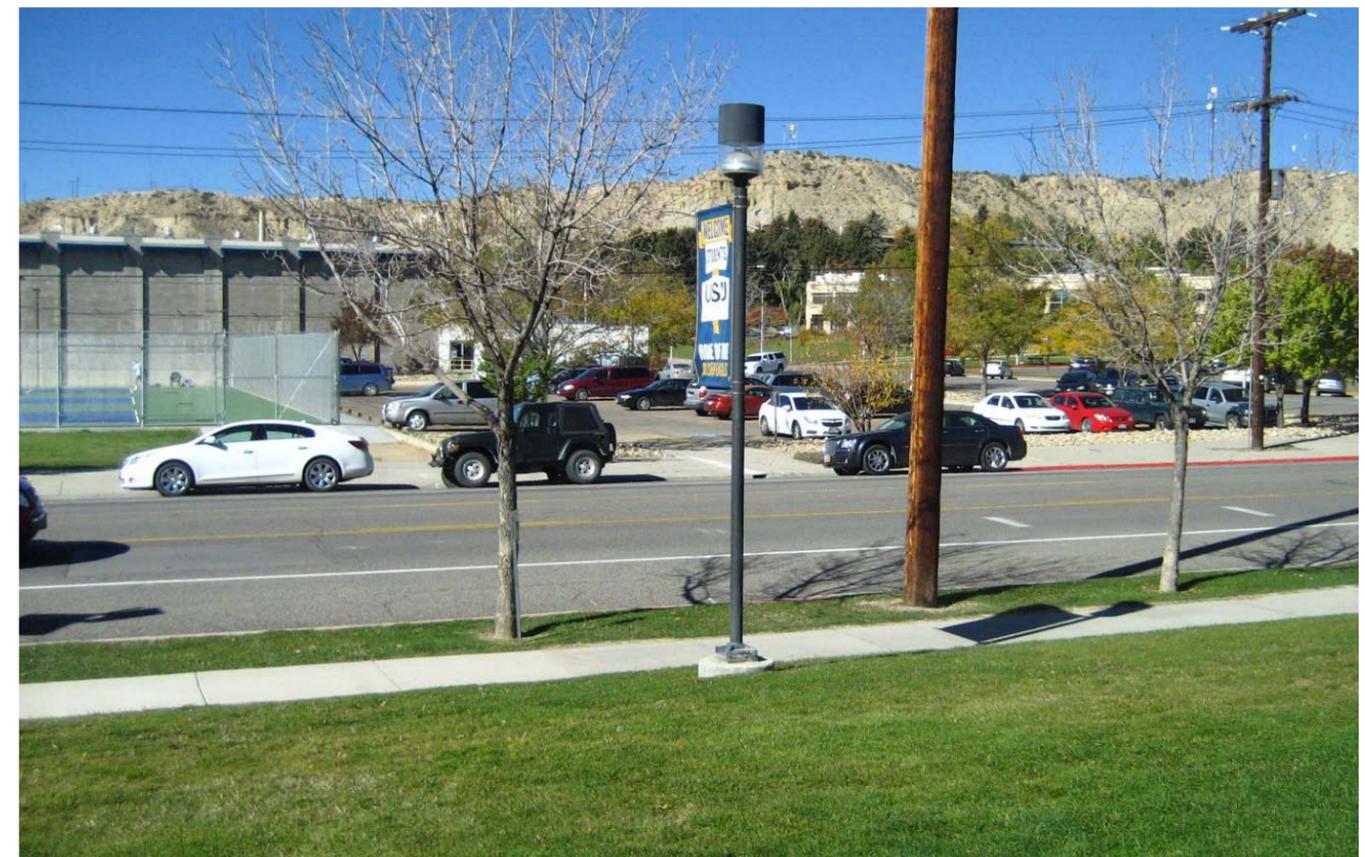
There are existing parking lots throughout the campus, and on-street parking spaces throughout the perimeter of the campus. There are existing **732 total spots (33 handicap spots)** of off-street parking stalls, and an estimated **330 total on-street parking spaces**. The church on the corner of 400 North and 600 East allows provisional use of its parking lot.

ZONING

The USU Eastern Campus property is situated within Price City limits. According to Price City zoning, the Campus is zoned Public Facility District, and the surrounding land is zoned Multiple Residential and Single Family Districts.



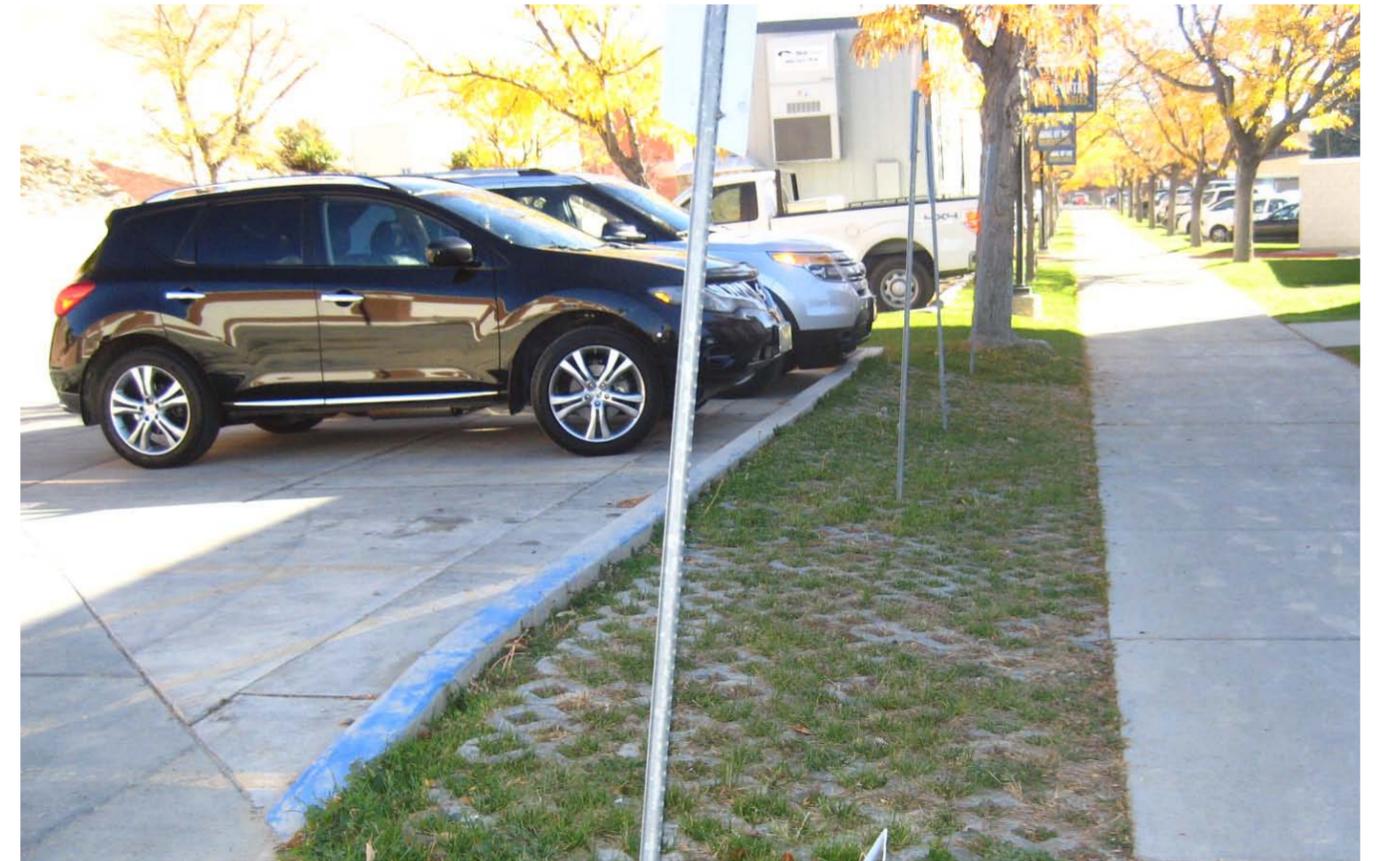
Off-street parking east of the Reeves building



On-street parking on 300 East, next to Washington Park



Existing bike racks on campus



Off-street parking



Pedestrian walkways



Maintenance and service vehicle access

CAMPUS ELECTRICAL & COMMUNICATIONS SYSTEMS - EXISTING CONDITIONS

ELECTRICAL

SUBSTATION

The existing campus takes electrical power delivery via a 46 kV overhead primary metered utility service from Price City Power. The campus owns and operates the distribution substation where the 46 kV is stepped down through a single 3 MVA substation transformer with voltage regulation to 12.5 kV for underground distribution throughout the campus. The University does have a spare transformer in the substation that can replace the current substation transformer in the event of a transformer failure.



The substation located on 300 East

Redundancy, Reliability & Downtime

The substation currently lacks good reliability and the campus is at risk of significant downtime and/or outages if and when components in the substation fail. For example, a failure in the substation transformer could be significant and would likely result in a 4-7 days outage for the entire campus. Unplanned replacement of the substation transformer would be a substantial outage because the failed transformer would need to be removed and the spare transformer would have to be installed, involving line crews, substation crews, testing, crane work, etc.

DISTRIBUTION SWITCHGEAR

There are a series of medium voltage pad switches installed throughout campus, the majority of these were installed approximately in the year 1990. The switches installed during this time were 600A rated air insulated fused pad-mount switchgear. The switch installed in 2015 for the new CIB building is a solid dielectric VFI pad switch.

DISTRIBUTION CABLING

The 12.5 kV power is distributed through campus in a mixture of 15 kV cables that are installed in ductbanks and tunnels throughout the site. The ductbanks are concrete encased and most of the cabling installed within the tunnels is in conduit. The majority of the cabling was installed around 1990 and is #2 AL EPR 15 KV, which has capacity to carry 130 amps at 12,470 volts (based on NEC table 310.60(C)(78)).

DISTRIBUTION TRANSFORMERS

The distribution transformers throughout campus are located at or near buildings generally and step the power down to either 480Y/277 volts or 208Y/120 volts depending on the building. The majority of the transformers appear to have been replaced around 1990, making them approximately 25 years old.

COMMUNICATIONS

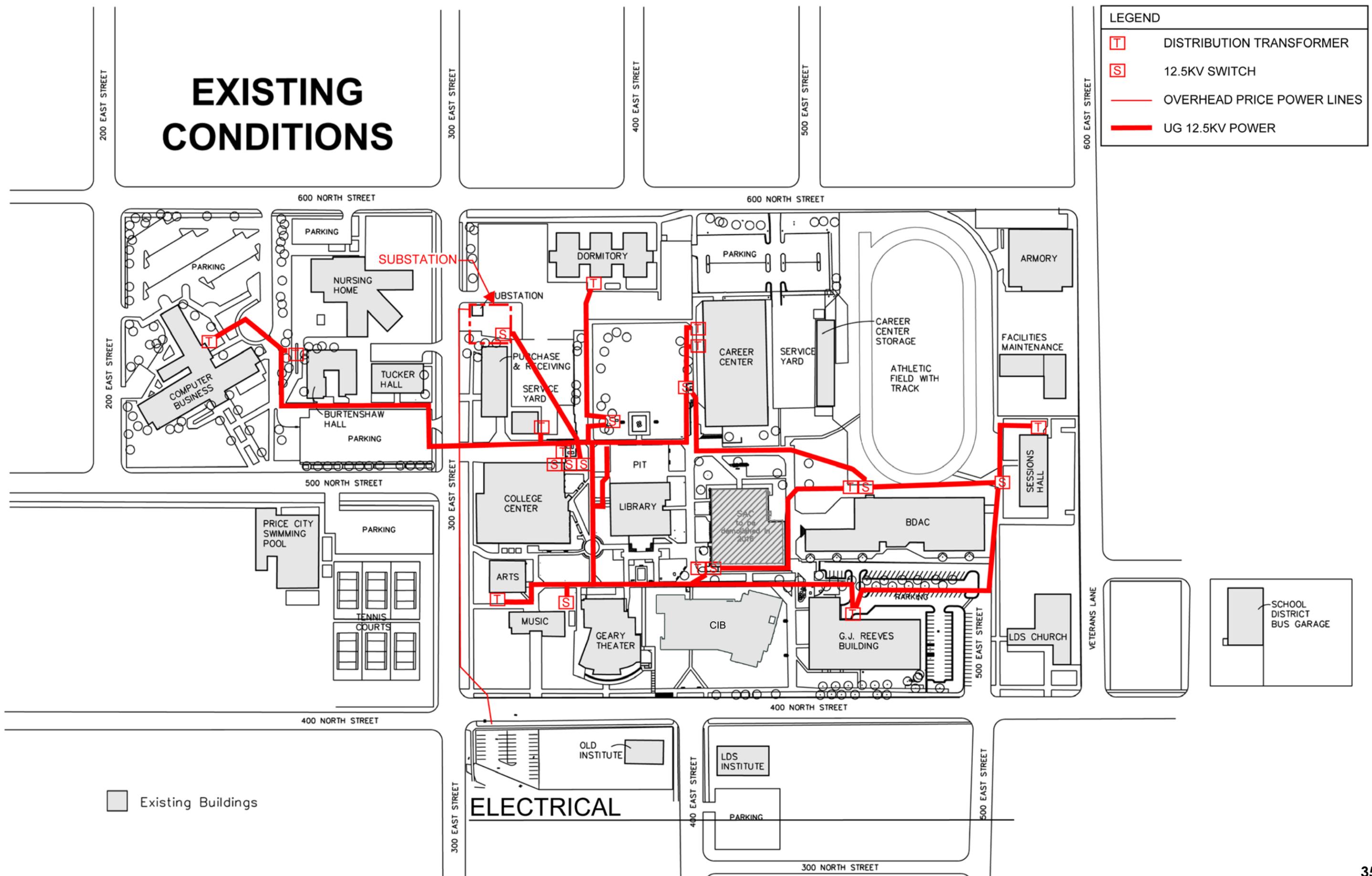
The existing facility has an owner provided campus telecommunications system consisting of fiber and copper backbone cabling between buildings. This cabling is installed within tunnels and conduits throughout campus.

RECOMMENDATIONS

Evaluations and recommendations for the electrical and communications systems for the 50-year planning period can be found on page 76.

EXISTING CONDITIONS

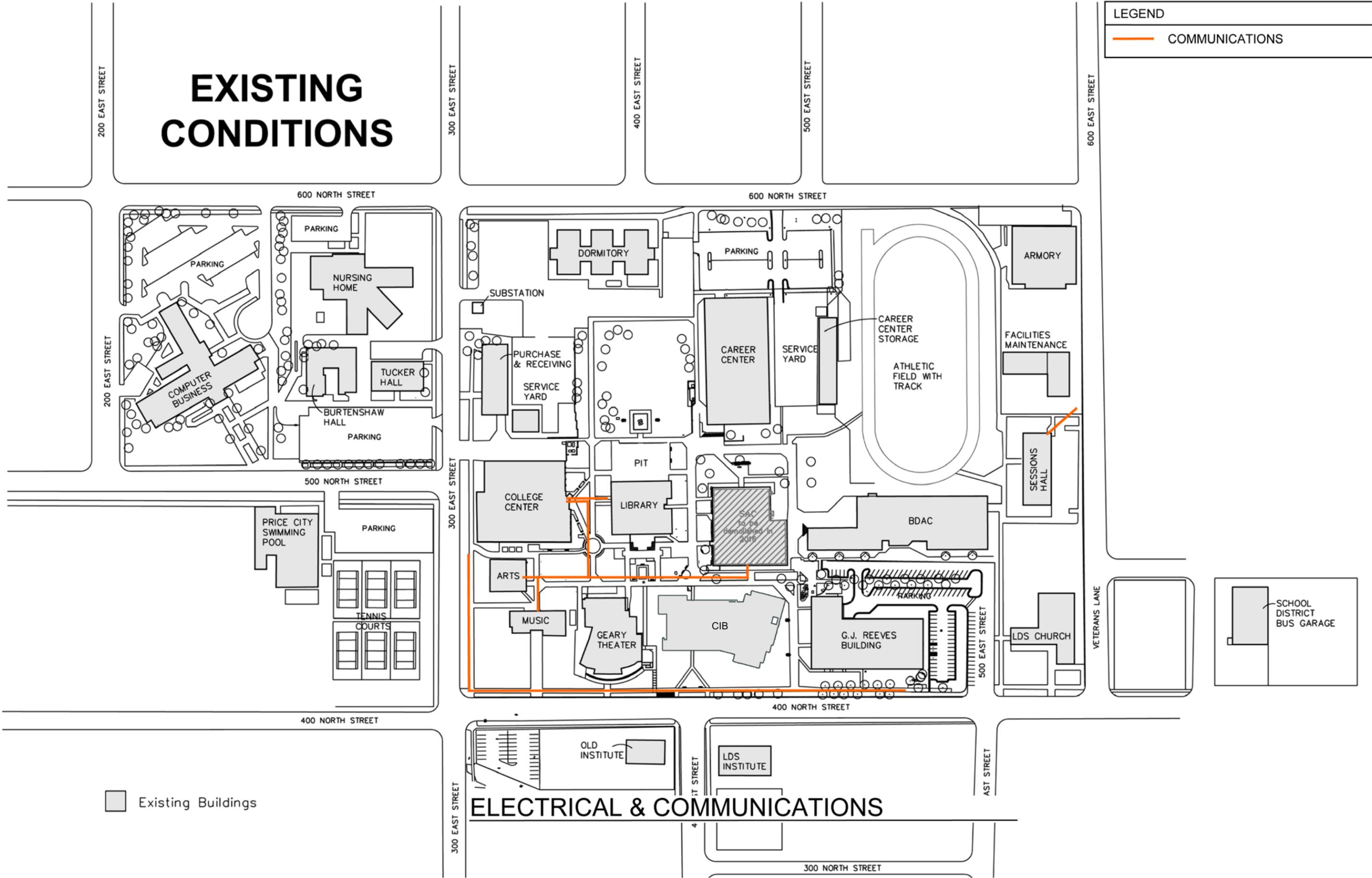
LEGEND	
	DISTRIBUTION TRANSFORMER
	12.5KV SWITCH
	OVERHEAD PRICE POWER LINES
	UG 12.5KV POWER



EXISTING CONDITIONS

LEGEND

— COMMUNICATIONS



Existing Buildings

ELECTRICAL & COMMUNICATIONS



CIVIL - EXISTING CONDITIONS

EXISTING SYSTEMS - BASELINE

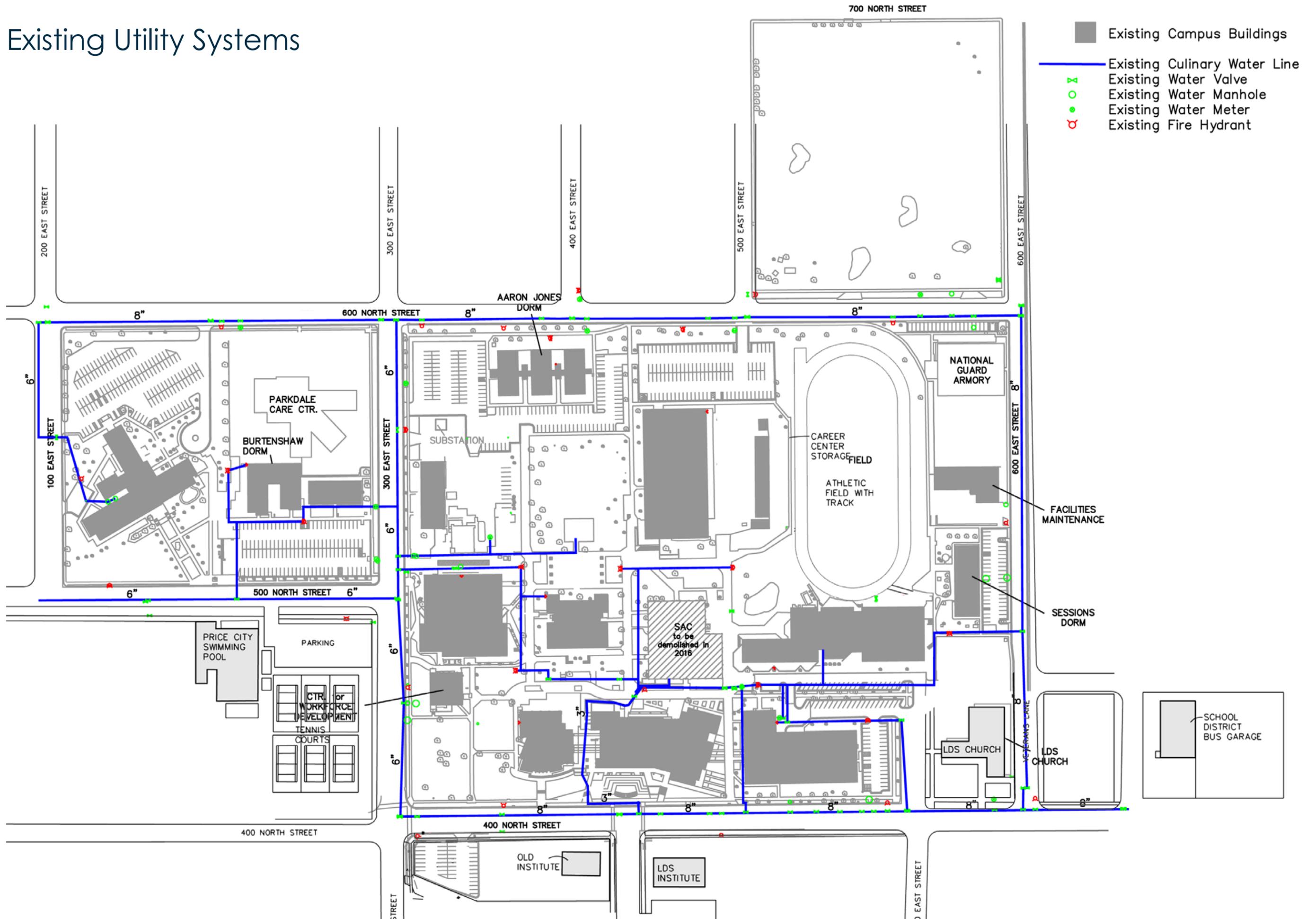
The existing utilities that were broadly analyzed were the sewer and storm drain collection systems, and the culinary water system. A majority of these systems inside Price City's, and Price River Water Improvement District's (PRWID) jurisdiction, are adequately sized for future growth. For example the sewer line in 600 North is an 8" line and in 400 East, the sewer line is adequately sized at 10".

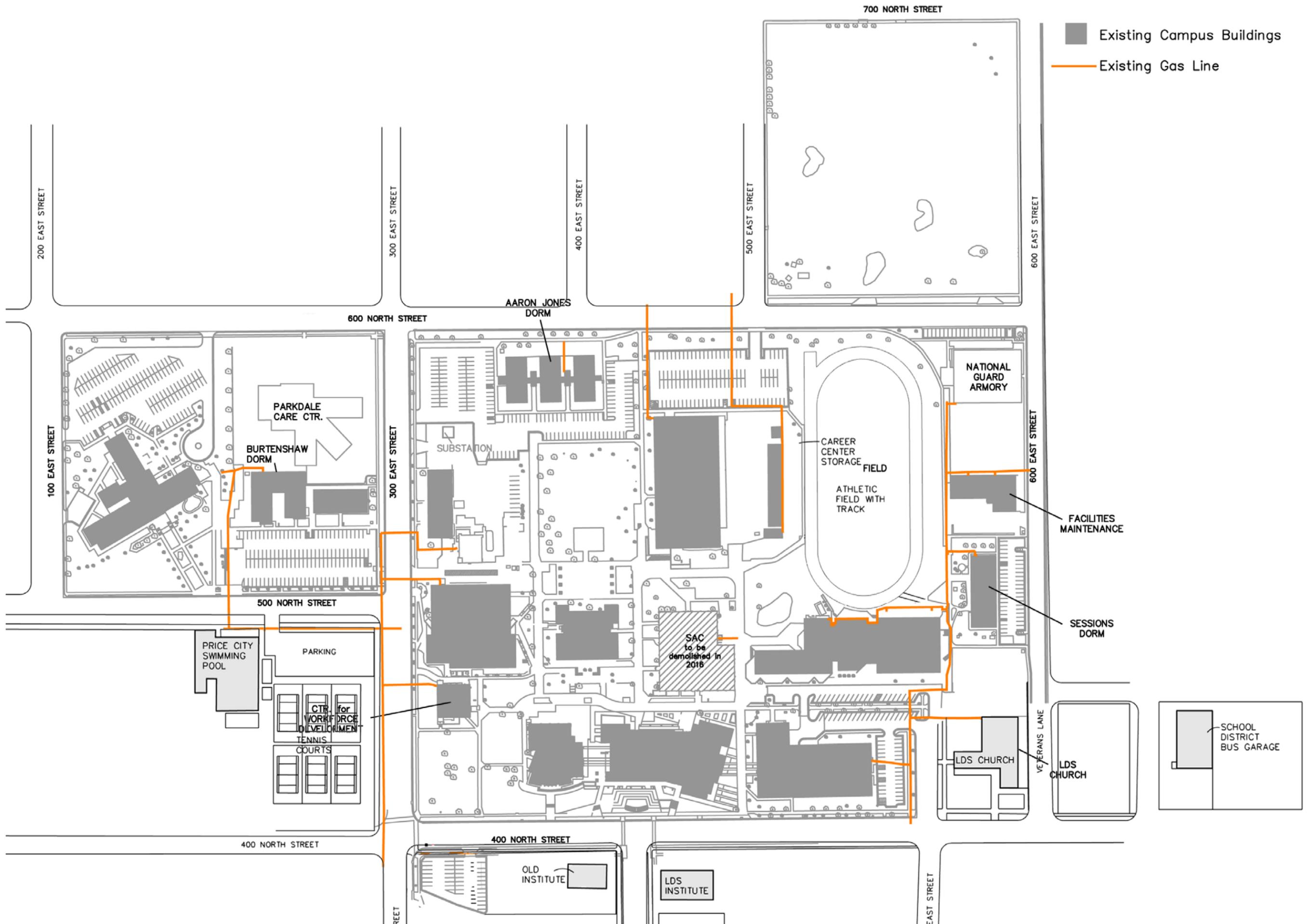
There are a few utility lines that are undersized for future growth: the sewer main in 400 North is currently a 6" line. Price City plans on replacing this line in 2016 with an 8" line. The storm drain system currently flows into the canal that is located just south of campus. At some point in the future, this canal will be replaced with a closed pipe system. When this transition occurs, the City will be forced to adjust the storm drain system. Table 1-1 below summarizes the City and PRWID systems near campus:

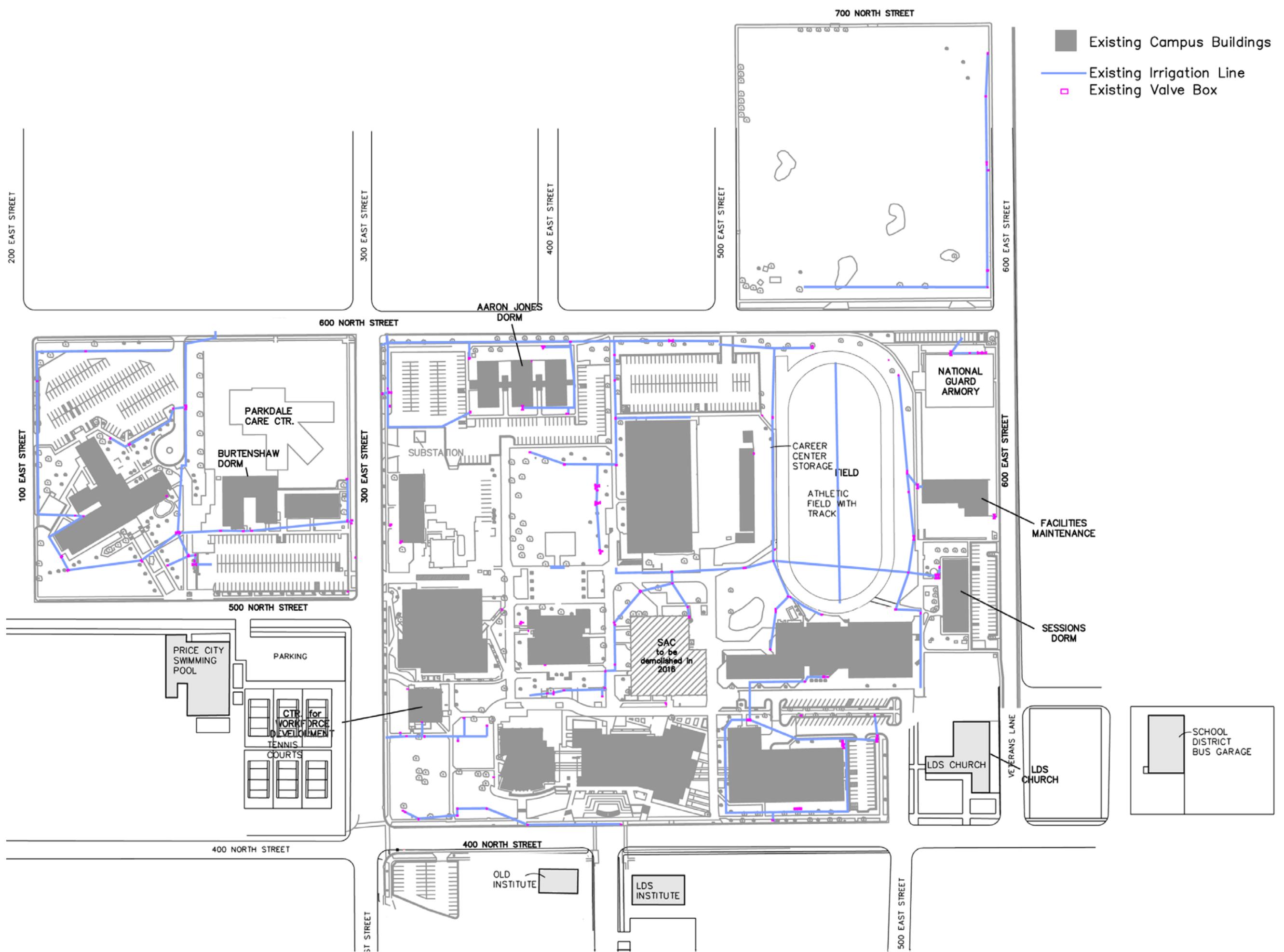
**Table 1-1
Existing System Summary for Price City and PRWID**

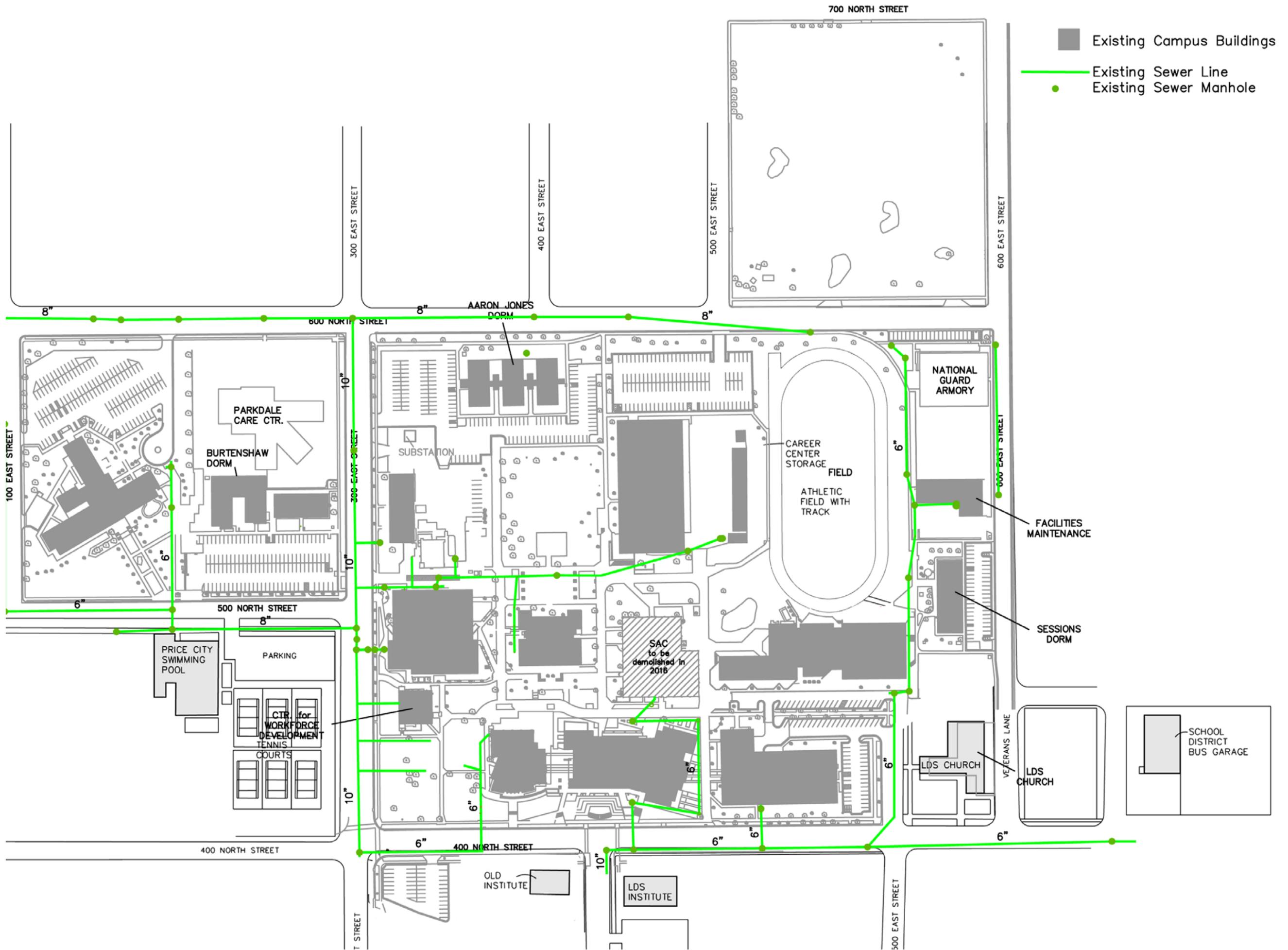
Location (Street)	Utility Type	Existing Pipe Size	Sized for Future Growth?	Future Replacement Plans
400 North	Sewer	6"	No	2016
400 North	Culinary	8"	Yes	
400 North	Storm Drain	18"	Yes	
600 North	Sewer	8"	Yes	
600 North	Culinary	8"	Yes	
600 North	Storm Drain	12" to 15"	Yes	
300 East	Sewer	10"	Yes	
300 East	Culinary	6"	Yes	
300 East	Storm Drain	12" to 18"	Yes	

Existing Utility Systems





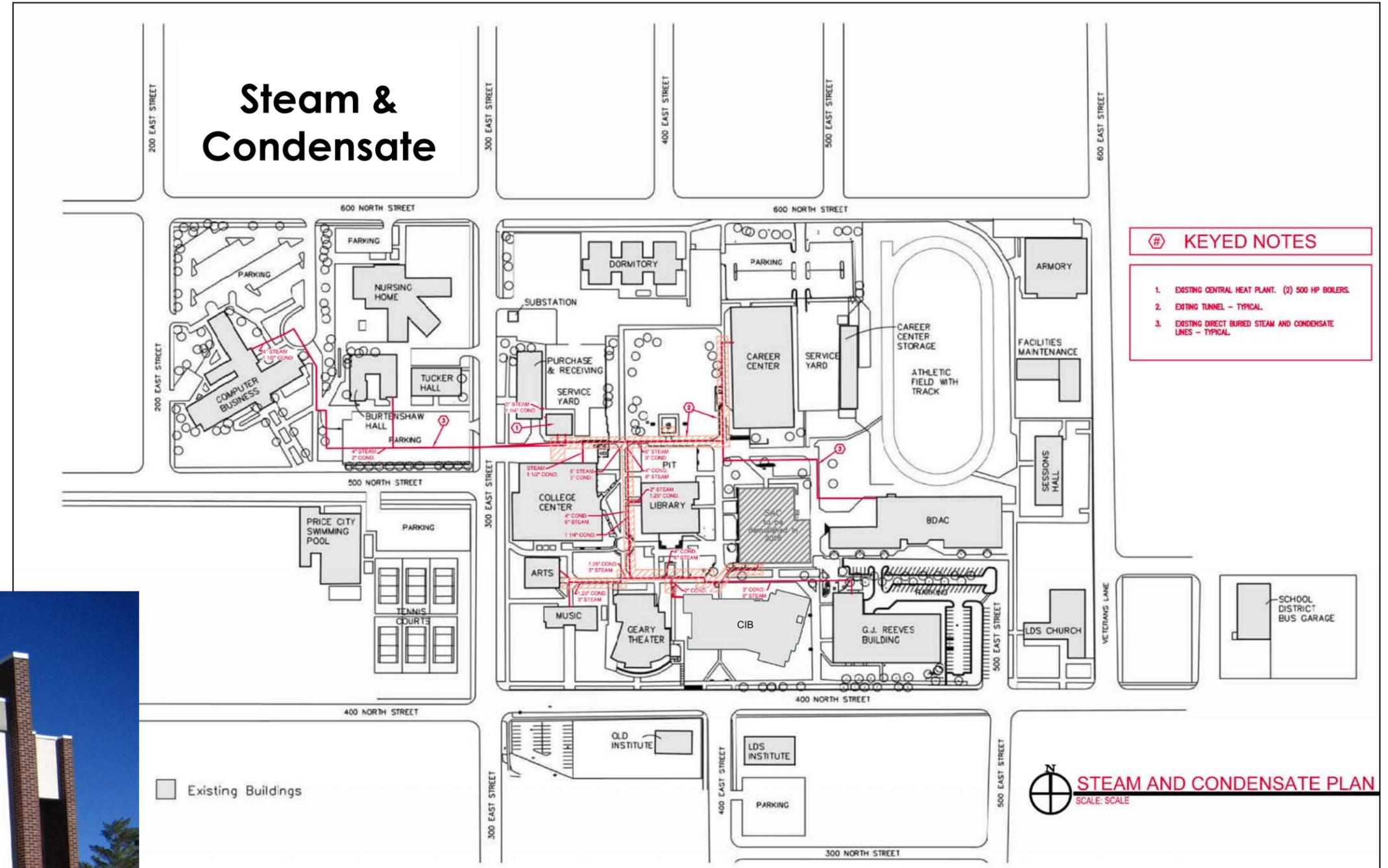




MECHANICAL SYSTEMS - EXISTING CONDITIONS

CAMPUS HEATING SYSTEM

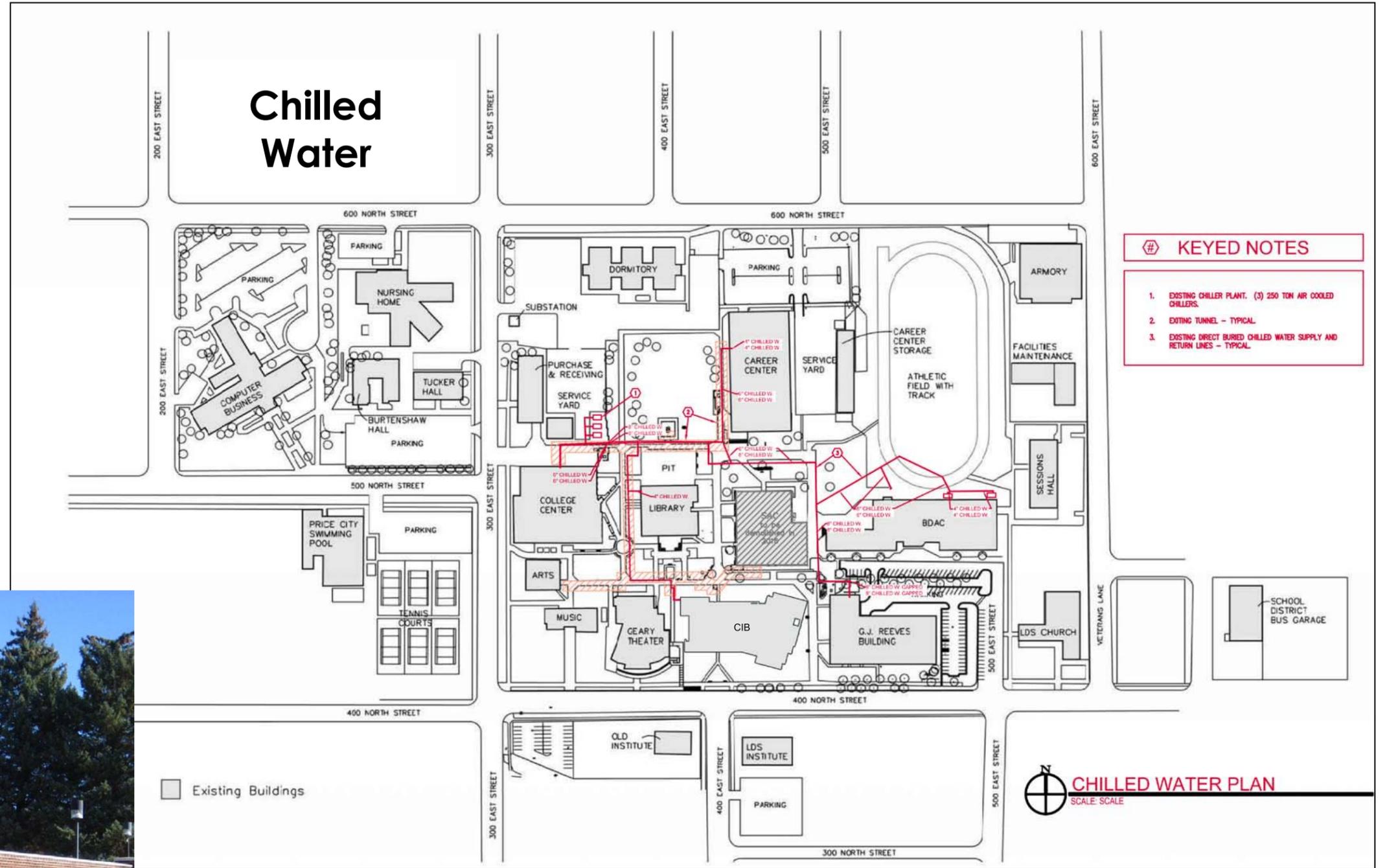
The Campus Heating System is a high pressure steam system. Steam is generated at the Central Heat Plant. The plant currently operates at about 40 PSI. The boilers are capable of operating at 125 PSI. There are two 500 Horsepower high pressure steam boilers. One boiler was installed in 2000; the other boiler was installed in 2002. There is a 10,000 gallon buried fuel oil tank. The boilers are gas fired with oil as a standby fuel. High pressure steam and condensate are distributed throughout the campus to each building. The majority of the piping is in tunnels. Some piping is direct buried. The steam plant operates year around. Steam is available for summer reheating for the HVAC systems and heating domestic water in the buildings.



CAMPUS COOLING SYSTEM

The Campus Cooling System is a chilled water system. Chilled water is provided by three 250 ton air cooled water chillers. Chiller #1 was installed in 1997. Chiller #2 was installed in 1998. Chiller #3 was installed in 2002. There are two 30 HP chilled water system pumps on VFD's. Chilled water piping is distributed throughout the campus to most buildings. The majority of the piping is in tunnels. Some piping is direct buried.

The cooling system analysis is simplified for use in the Master Planning purposes only. The existing cooling load is based on information from the campus personnel that two of the three chillers can handle the cooling load on a design summer day.



Existing Chillers

drivers

1/4 Mile walking radius
(5 minute walk)



[1] The Central Instruction building completed in 2015, will create a strong presence on the campus on 400 N. The campus will take on a 'language' this new building.

Public Open House
PRICE CAMPUS MASTER PLAN

CRSA

5. phasing plans

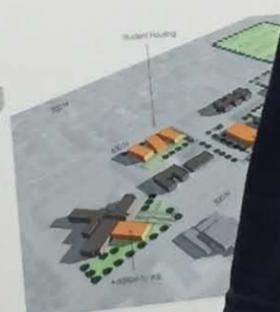
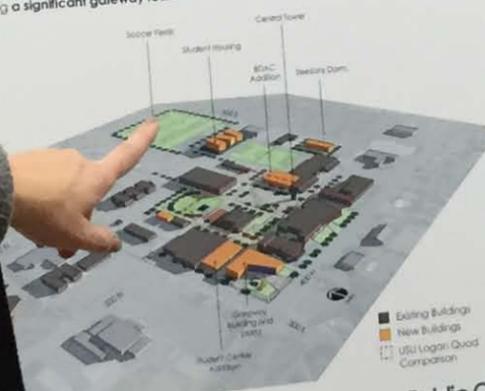
Utah State University
EASTERN

Phase 1

0 - 15 yrs

As campus plans develop and are achieved incrementally, and the phasing plans are a good tool to realize a logical progression that meets the space needs of the campus over time. The first phase of the campus plan envisions a strategy that achieves the following:

- Create a campus core that works with existing spaces like the "pill" and fountain. This core will include a large gathering space with other intimate landscaped spaces anchored by a central tower.
- Add more spaces for campus users including an addition to the BDAC, expansion of the Student Center, and a new gateway building.
- Gateway improvements on all major intersections around the campus including a significant gateway feature at 300 E & 400 N.



Phase 2

30 - 35 yrs

The campus continues to grow during this period. Some of the highlights of this phase including the following:

- Addition to the WB
- It is assumed that the USU Eastern will acquire the Parking Care Center property in the future. This new area can be used for more student housing and parking.
- Introduce a new administration building in this phase to consolidate all administrative functions.
- New operations and maintenance building.

Public Open House
PRICE CAMPUS MASTER PLAN

CRSA

Views



4. illustrative plan

PHILOSOPHICAL PLANNING APPROACH TO CAMPUS

To guide the overall planning of campus, the USU Eastern Master Plan Team participated in programming exercises to discuss the key planning elements. A planning goal was identified for the Price Campus by the project steering committee. This vision represents the overall key planning strategy, which is to acknowledge the importance of the campus as an asset to the community:

- The Price Campus should function as a full service campus, providing the full range of services required for a residential campus.
- The campus should also serve the community and the specific needs of the demographics being served.
- The physical layout of campus should be organized in a way that reflects the needs of this population.
- The campus should continue to grow in an orderly manner, organized around formal walkways (that often double as fire lanes) and gathering spaces.
- To increase activity on the campus during the day, and to foster stronger community connections, a need has been identified to add amenities that may invite users to campus. Amenities may include outdoor seating or pavilions, better coordinated site amenities that are consistent across the campus, and more functional outdoor student gathering spaces.

PHASING

To accommodate a logical pattern of growth on campus, the plans have been outlined in three phases. These include the following:

Phase I:	Year 2030
Phase II:	Year 2045
Phase III:	Year 2065

As outlined in Chapter 2, certain growth has been assumed to occur on campus for the purposes of planning. If this growth does not occur as expected the time frame for each phase can be extended as needed. Or, the phases can be shortened as needed should growth increase faster than anticipated.



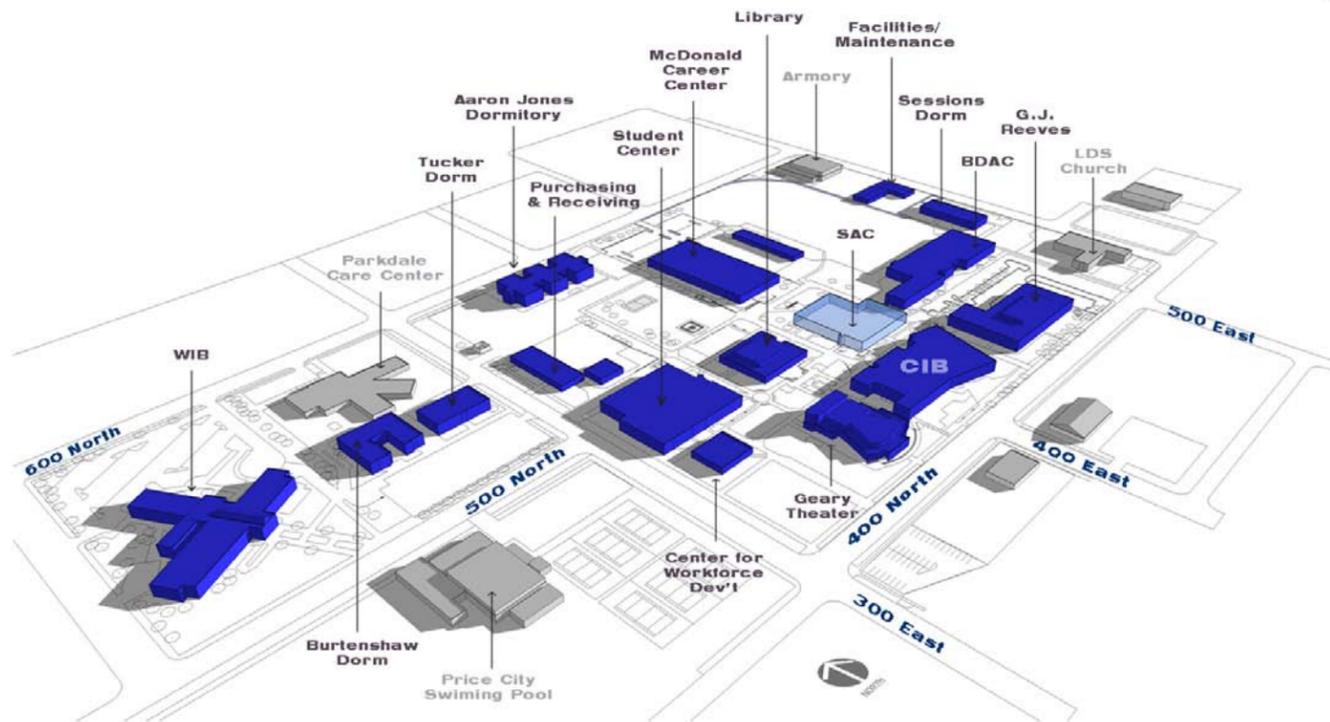
PLANNING DRIVERS

QUICK FACTS

- The entire campus lies within a 1/4 mile walking radius, which is a 5 minute walk
- The planning window is for a full build-out in 50 years
- Some facilities, amenities, and programs may have to move to other outlying properties in the City that are owned by USU
- It is assumed that the University may acquire the Parkdale Care Center property in the future
- The new CIB should be able to help meet the space needs of the campus for the next four (4)+ years



[2] The Student Activity Center (SAC) is slated to be demolished in 2016. This will create more opportunities for open space development within the campus



[3] Two new soccer fields coming in at the northeast corner of campus. **[4] New soccer field and walking/running trail**



[1] The Central Instruction Building (CIB) completed in 2015. This new building creates a strong presence and gateway for the campus on 400 N. The future planning of the campus will take cues from the 'language' this new building brings.

Green/Open Space
 USU Property

PLANNING PRIORITY AREAS

CAMPUS EDGE & IDENTITY

ACTIVITY & RELAXATION

PEDESTRIAN EXPERIENCE

Iconic Landmarks

Campus Brand & Identity

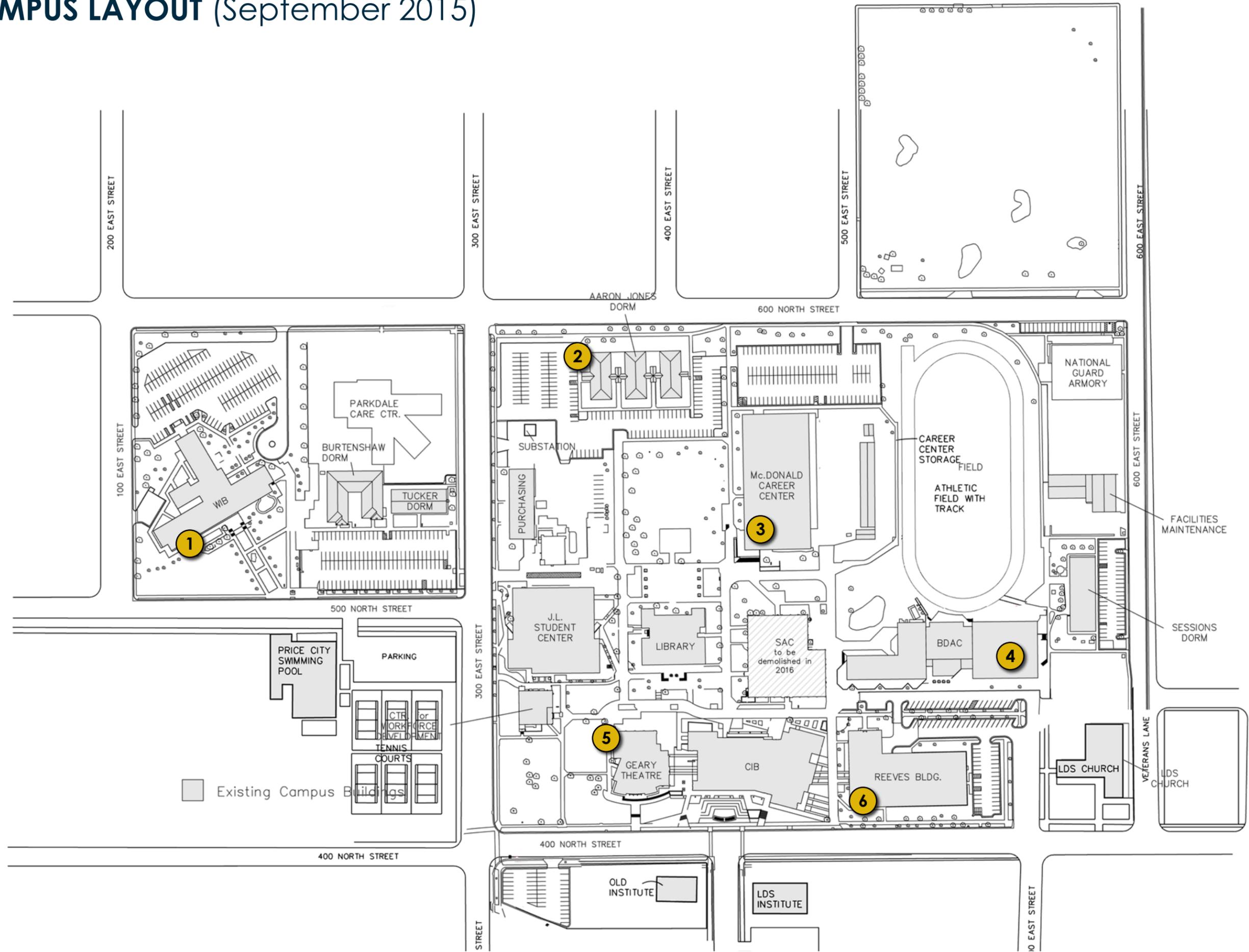
Quads, Courtyards, Plazas

Places for People, Fields & Rec Areas

Campus Core Strategy

Multi-modal Travel

CAMPUS LAYOUT (September 2015)





West Instructional Building (WIB)



Aaron Jones Hall



McDonald Career Center



Bunnell Dmitrich Athletic Center (BDAC)

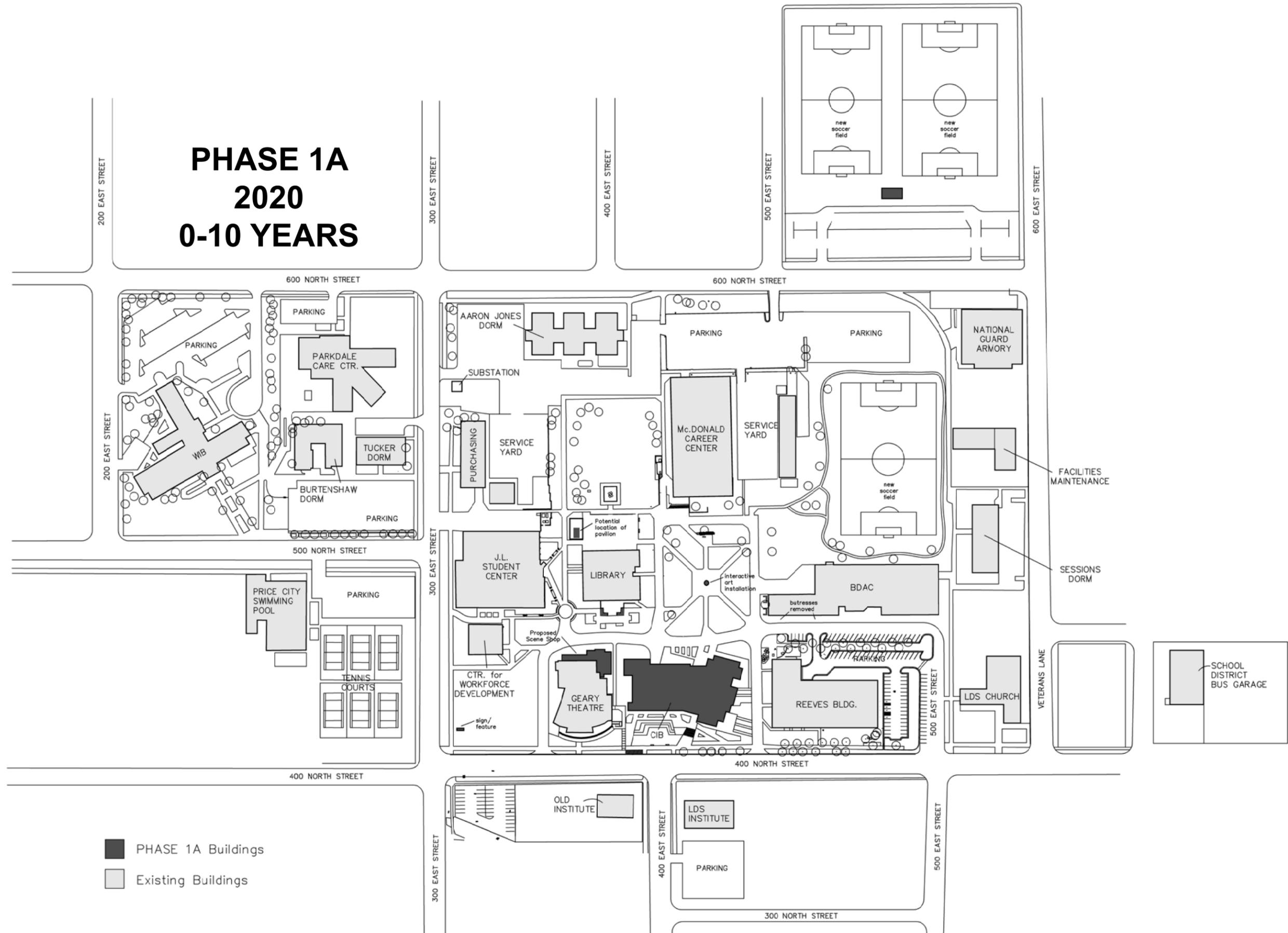


Geary Theater



Reeves Building

PHASE 1A 2020 0-10 YEARS



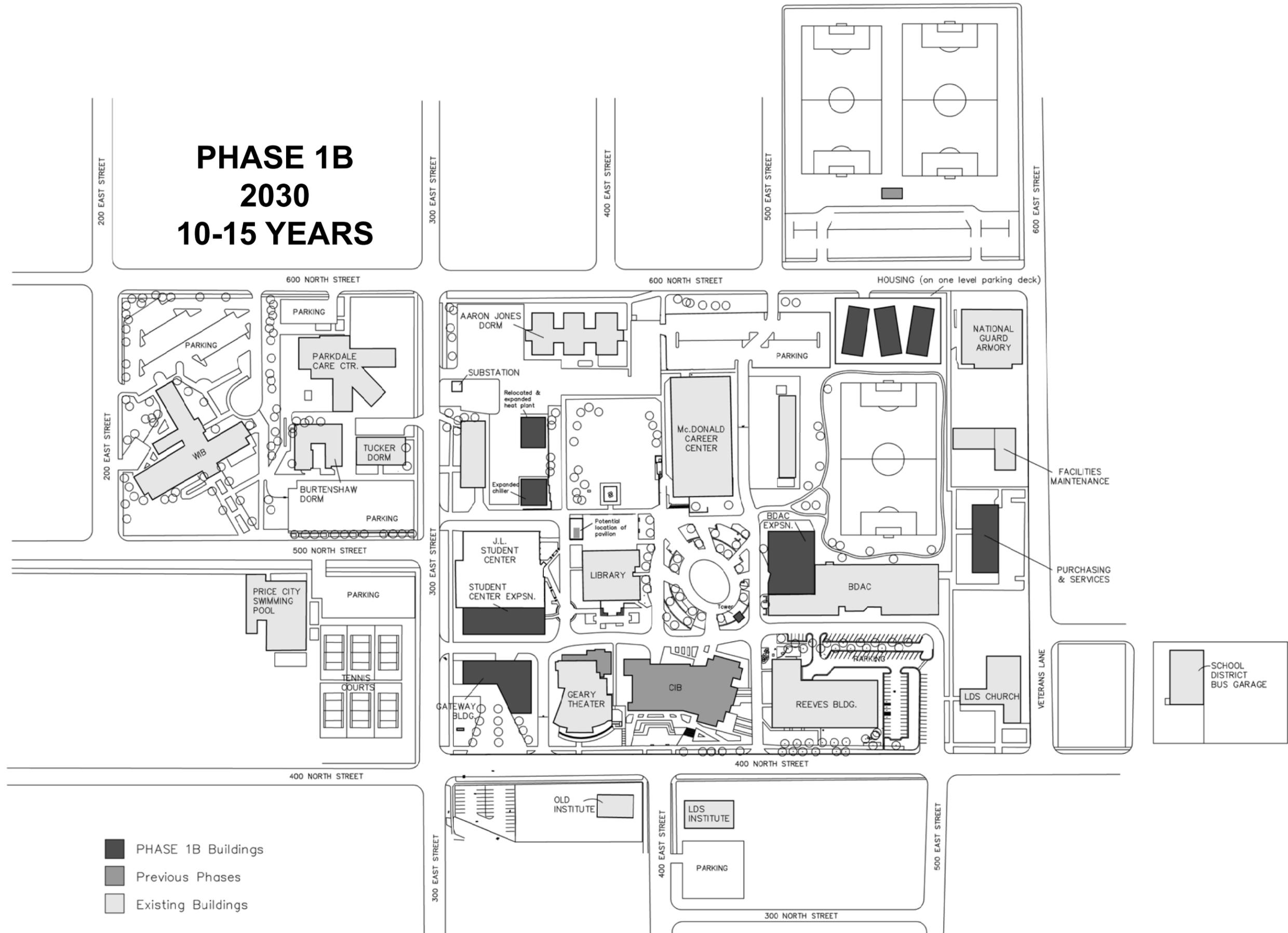
- PHASE 1A Buildings
- Existing Buildings

- CIB completed
- Scene shop addition to Geary Theater
- SAC demolished
- New walks introduced at core
- Fire lanes introduced on southern half of campus
- Pavilion next to Library
- New soccer field and trail
- Buttresses removed from BDAC
- New soccer fields north of 600 N

- Existing
- PHASE 1A



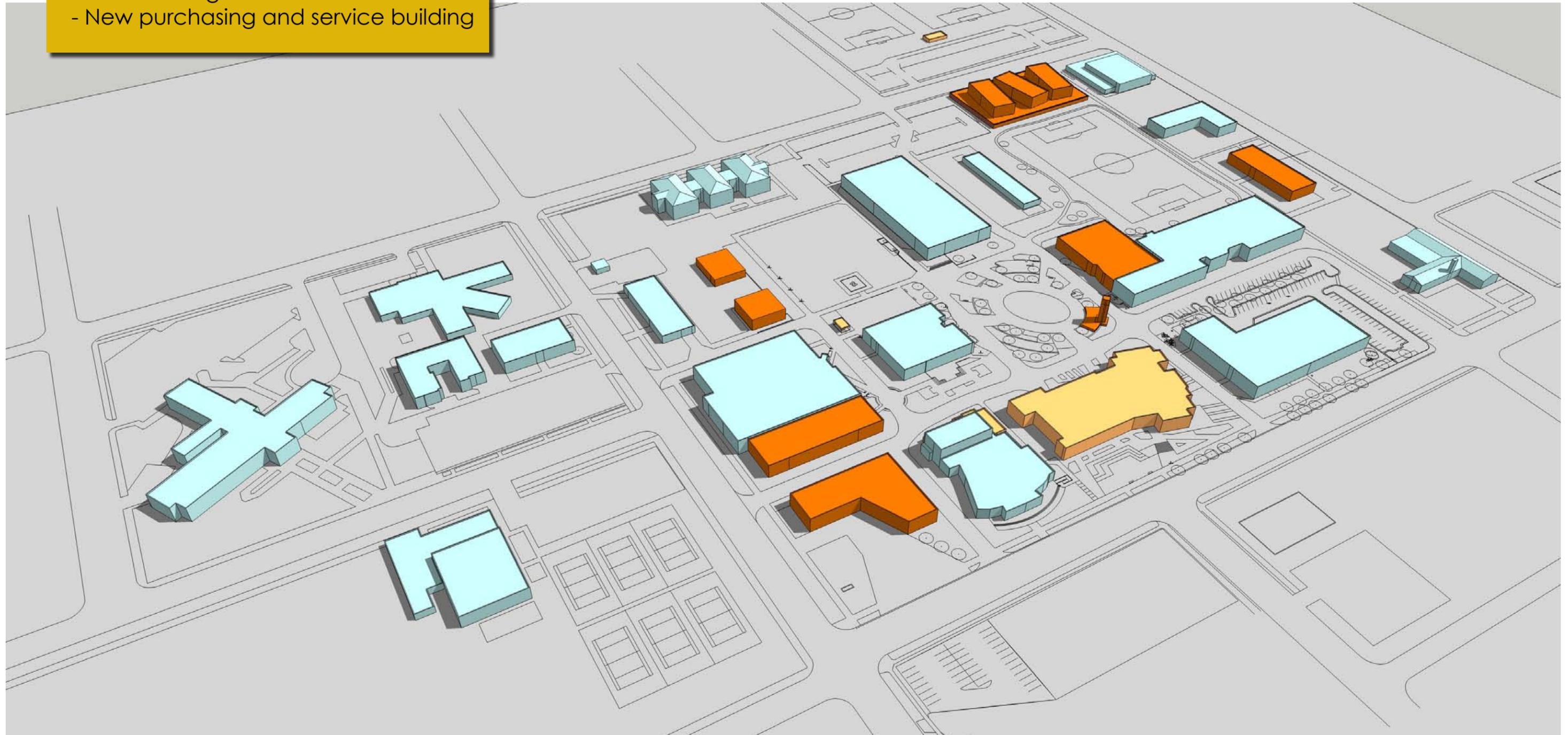
PHASE 1B 2030 10-15 YEARS



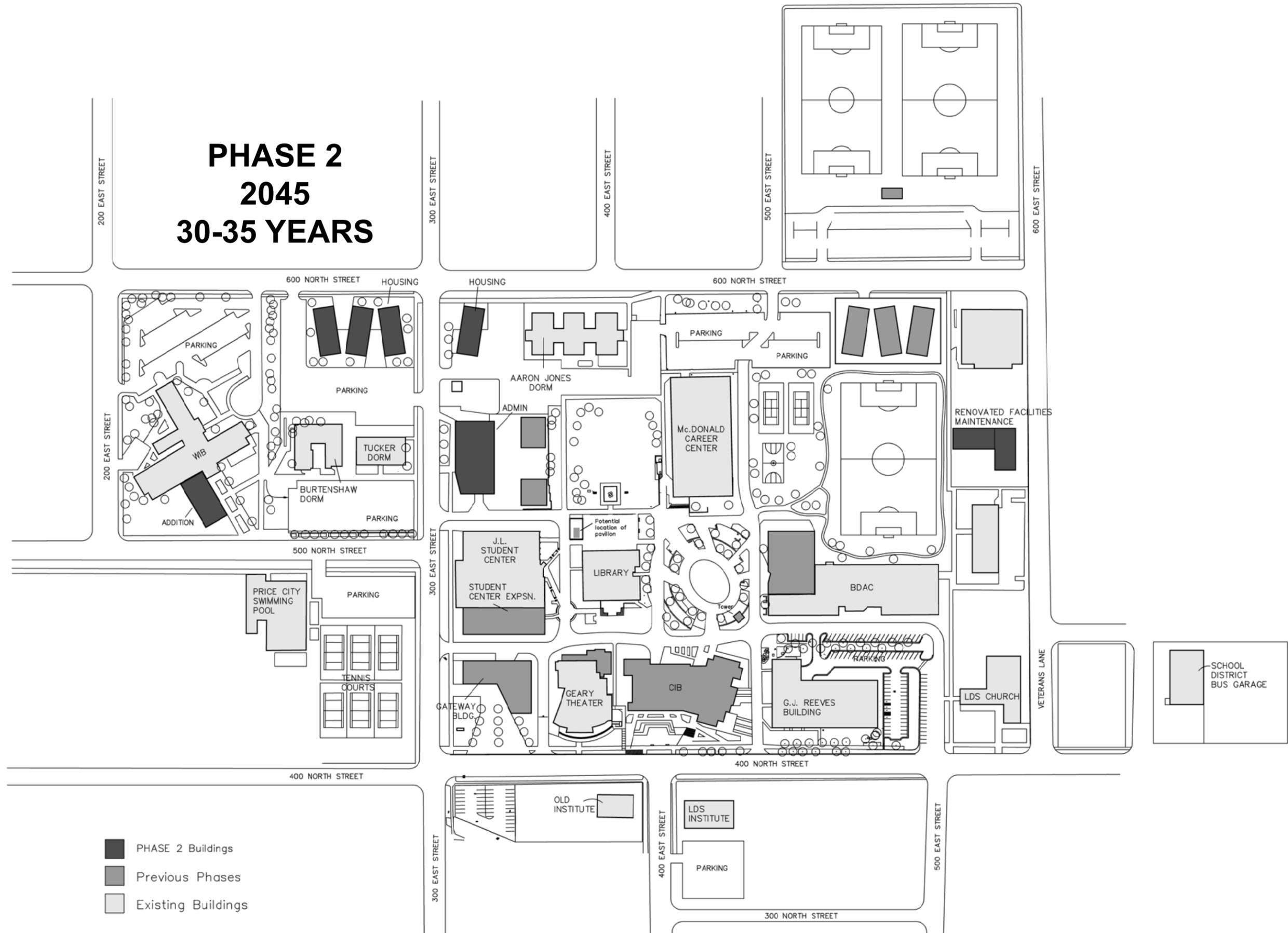
- PHASE 1B Buildings
- Previous Phases
- Existing Buildings

- Gateway Building built
- Extension to College Center
- New central plaza, tower & stage
- Northern fire lanes introduced
- BDAC expansion
- New housing at northeast corner
- New purchasing and service building

	Existing		
	PHASE 1A		PHASE 1B



PHASE 2 2045 30-35 YEARS

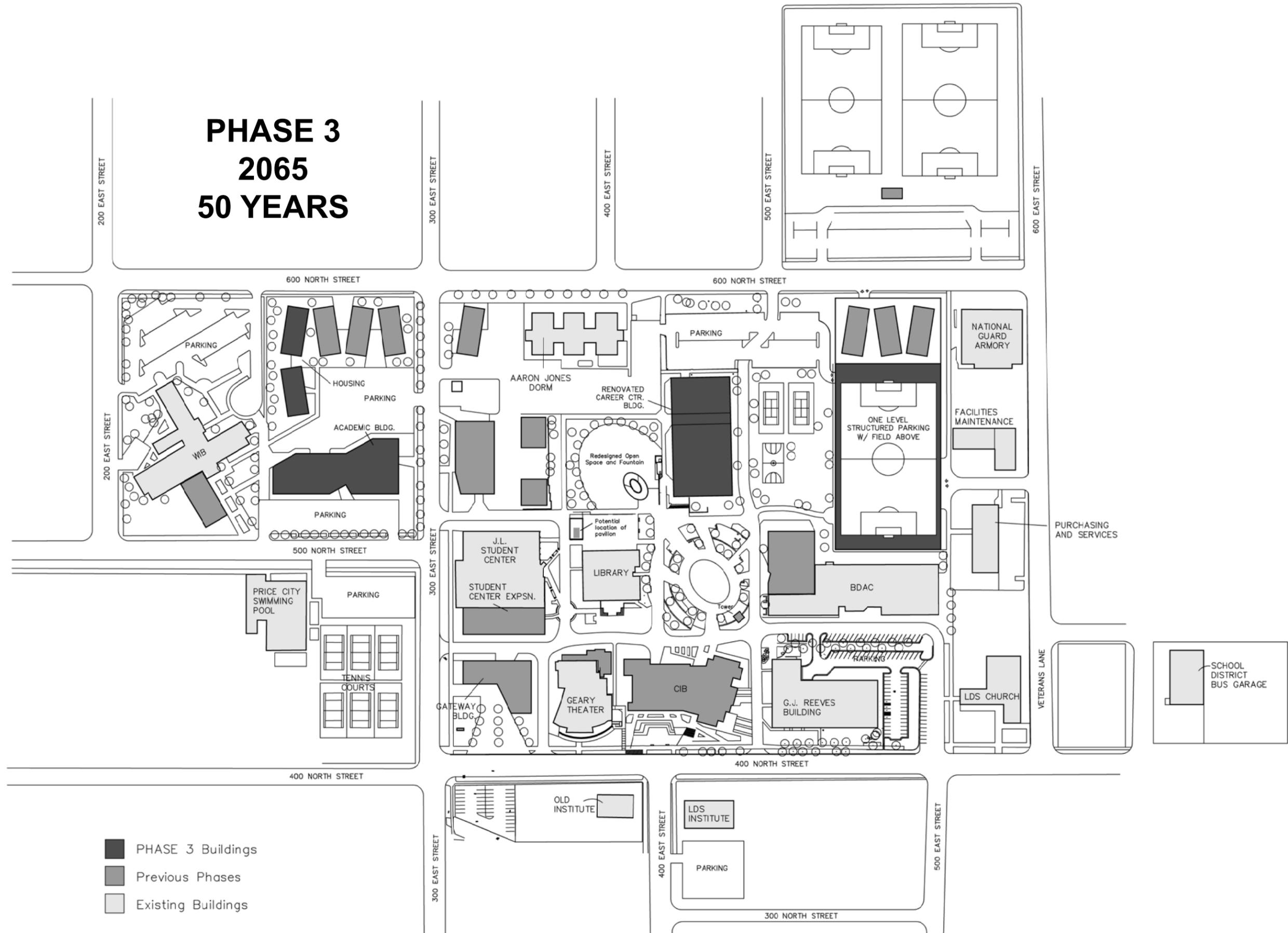


- Addition to Business Building
- New housing in place of Care Center
- New Administration building
- New/Renovated facilities building

	Existing		PHASE 1B
	PHASE 1A		PHASE 2



PHASE 3 2065 50 YEARS



- PHASE 3 Buildings
- Previous Phases
- Existing Buildings

- More housing at northwest corner
- New academic building
- Renovated McDonald Career Center
- New parking structure and field

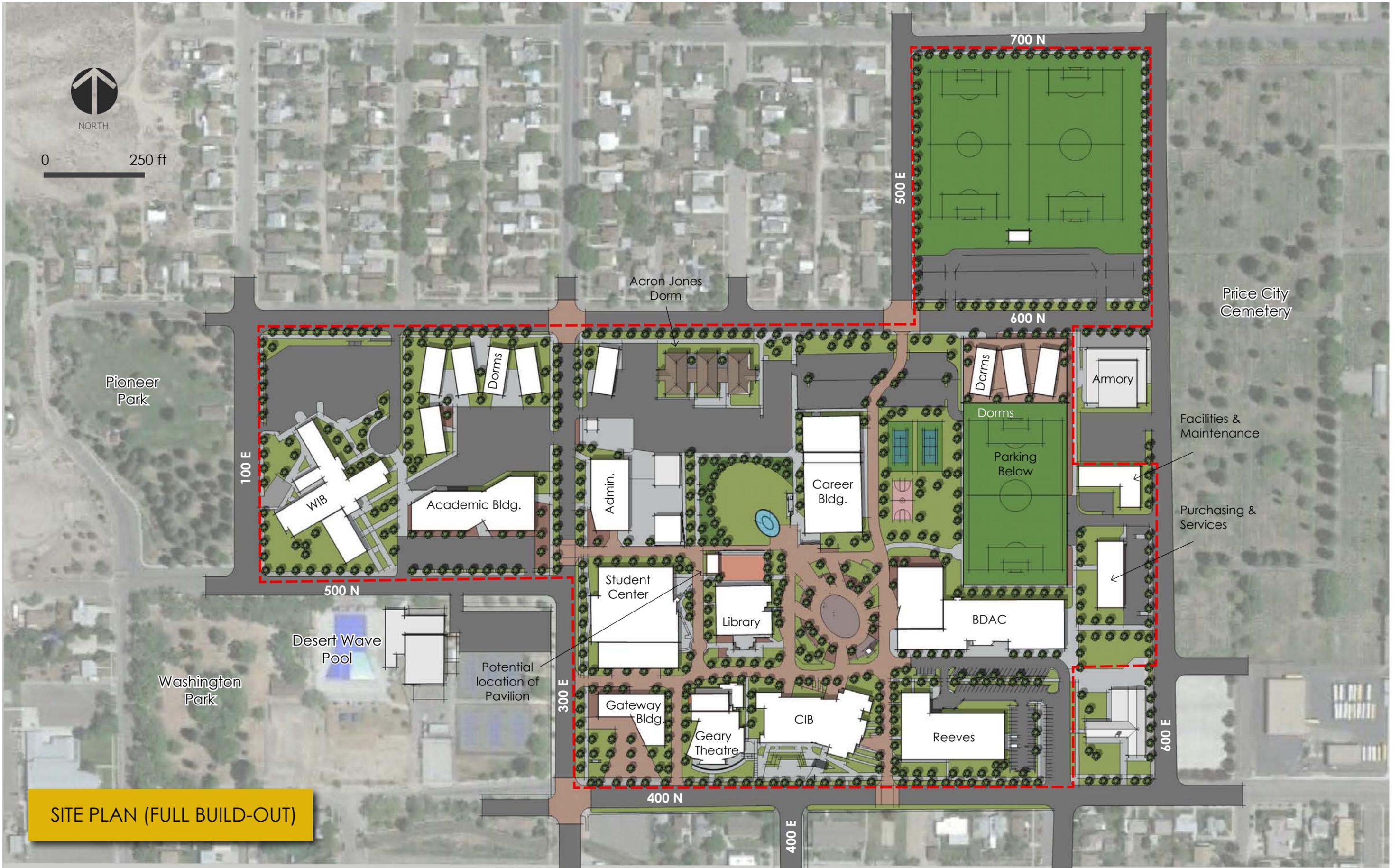
- | | | | |
|---|----------|---|---------|
|  | Existing |  | PHASE 2 |
|  | PHASE 1A |  | PHASE 3 |
|  | PHASE 1B | | |





NORTH

0 250 ft



SITE PLAN (FULL BUILD-OUT)

ILLUSTRATIVE RENDERINGS



Looking towards the tower from the central plaza

Aerial view from Southwest





WIB

Administration

Student Center

Gateway Building

Library

Geary Theatre

CIB

Reeves Building

400 N



Aaron Jones

Career Center

600 N

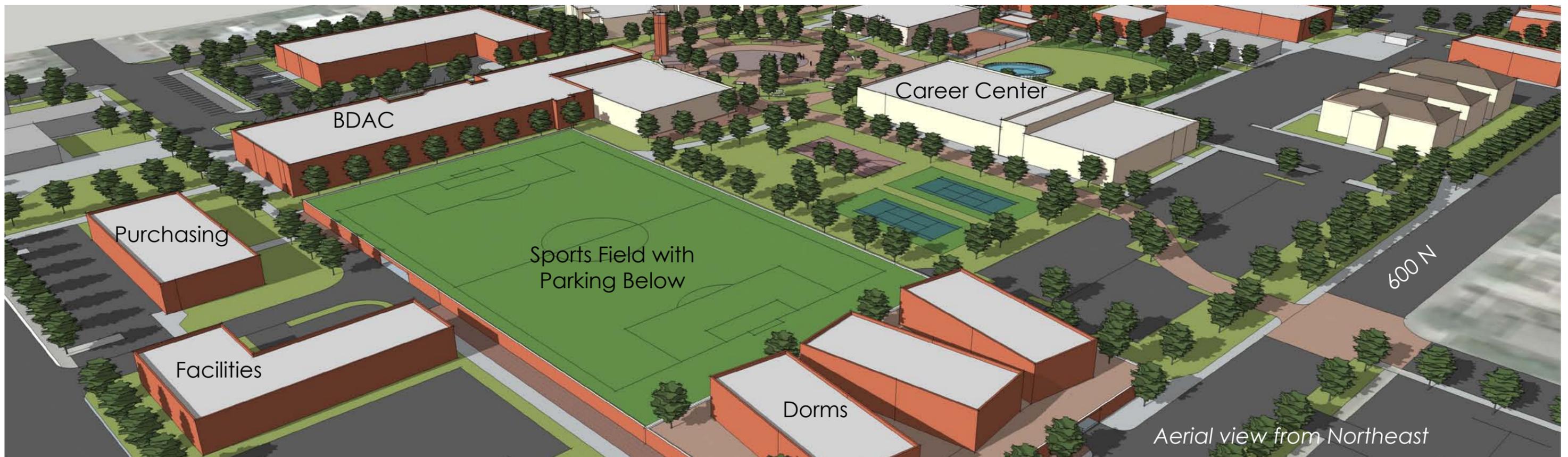
Rec Area

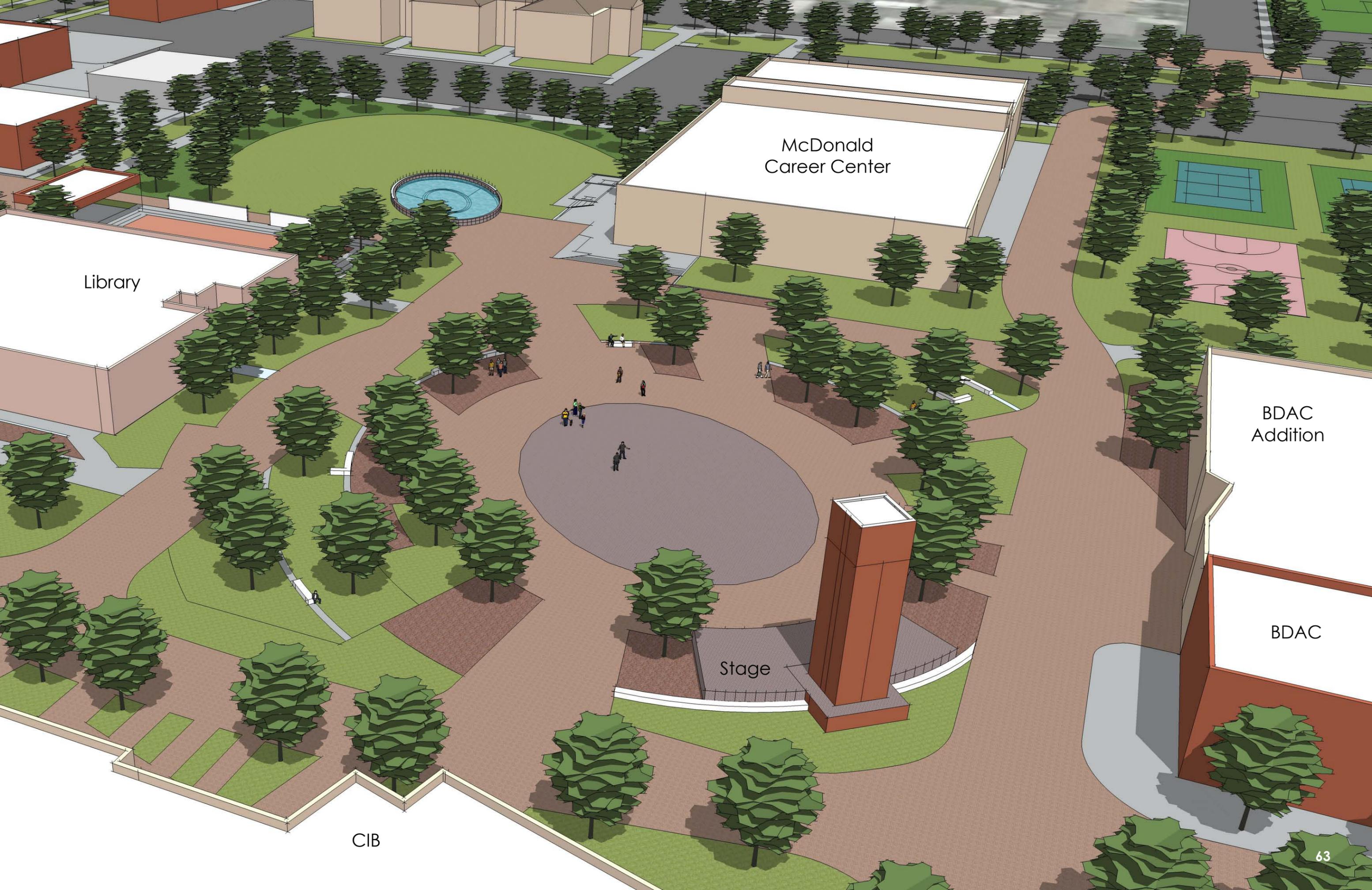
BDAC
Addition

Sports Field with
Parking Below

BDAC

Aerial view from Southeast





McDonald
Career Center

Library

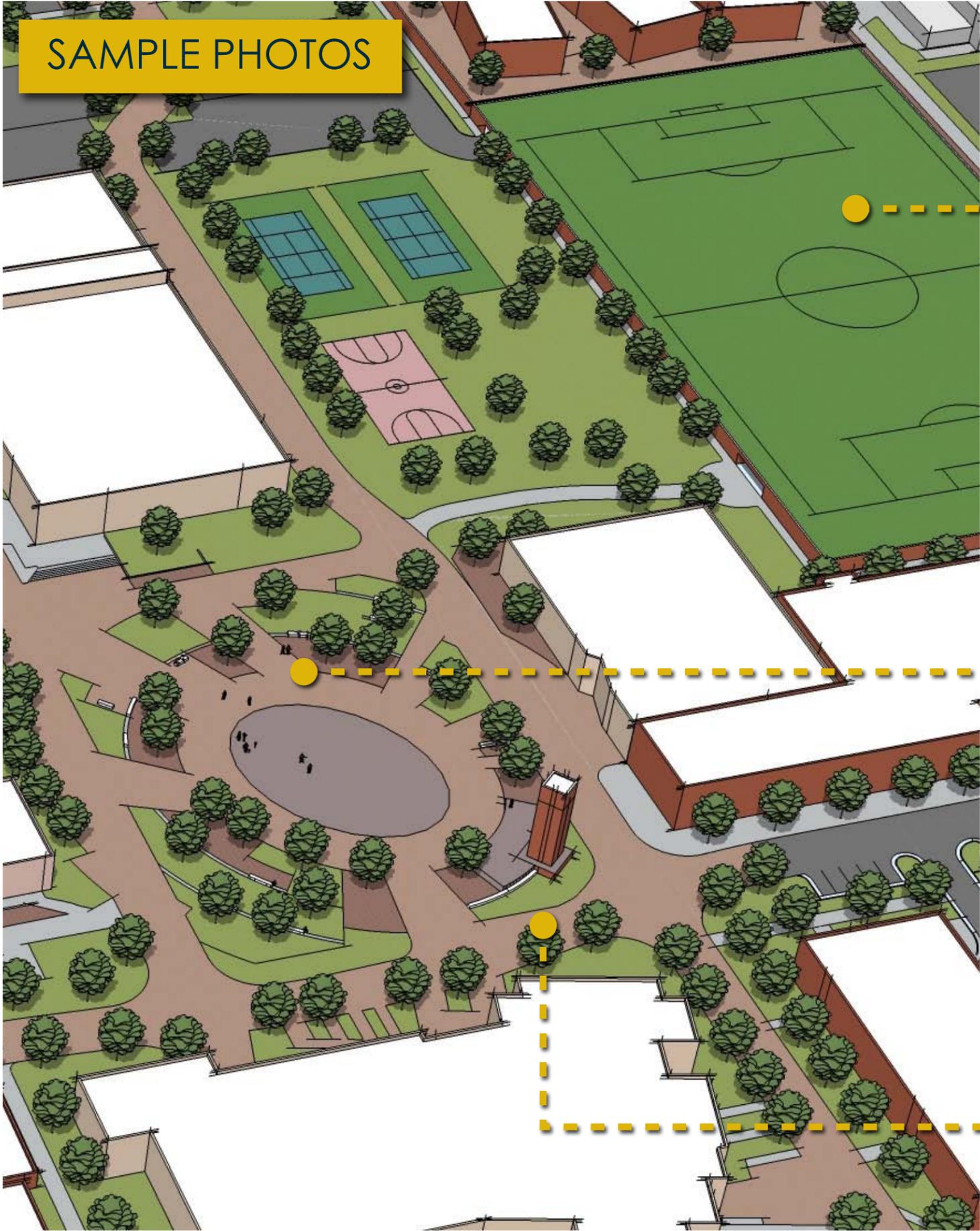
BDAC
Addition

BDAC

Stage

CIB

SAMPLE PHOTOS



Parking garage with field on roof



Central plaza with mix of hard and softscape and seatwalls for relaxation



Clock tower

Seat walls and areas around the perimeter of the plaza can be programmed for multiple activities including fairs, exhibitions, food trucks, etc.

Buildings that surround the plaza such as the BDAC addition should have large openings that look onto the plaza

The clock tower becomes a focal point/vista on campus

The stage can be used for official campus gatherings such as graduations as well as speeches, concerts and plays



Artist's impression of the central plaza

GATEWAY BUILDING & PLAZA STUDY

The intersection of 300 East and 400 North serves as the primary gateway to the campus. The Master Plan envisions a building and a plaza to anchor the corner and to herald the visitor to the campus. This building and plaza would be introduced in Phase 1B.

The building could serve as an administrative or classroom building and include a visitor/information center as well. The plaza could have a bosque of trees, a water body and an interactive public art feature to encourage people to linger.

The gateway building should be porous enough to allow street level views into the core of campus and to create a welcoming edifice for community members and visitors into the campus. The building should also be designed to be flexible to allow for multiple functions and activities. An L-shaped building is proposed to frame and serve as a backdrop to the plaza.

Level 1 - 4,600 sf
Level 2 - 14,000 sf
Level 3 - 14,000 sf
Total sf - 32,600 sf

CHARACTERISTICS

- The elevation change from the corner of 300 East and 400 North is 2.5 feet. This will allow for some stepping of the plaza and a play of levels.
- The space is envisioned as a piazza with a bosque of trees and water features.
- Primary facade materials proposed in this study are metal panels and curtain wall glazing.
- Site hardscape finishes include cast-in-place concrete and stone pavers.
- Pedestrian furnishings and amenities should be integrated into the plaza design. These should be in line with the landscape design guidelines and standards established for the campus. (See page 100 for more information).
- The building design should meet the design guidelines and standards established for the campus. (See page 86). Even though the architecture can have a distinctive character, it should still generally be tied to the rest of the campus through building elements, form and massing.

The renditions provided are an artist's impression of the gateway building and plaza and are not prescriptive.





BOB HENRY PROPERTY STUDY

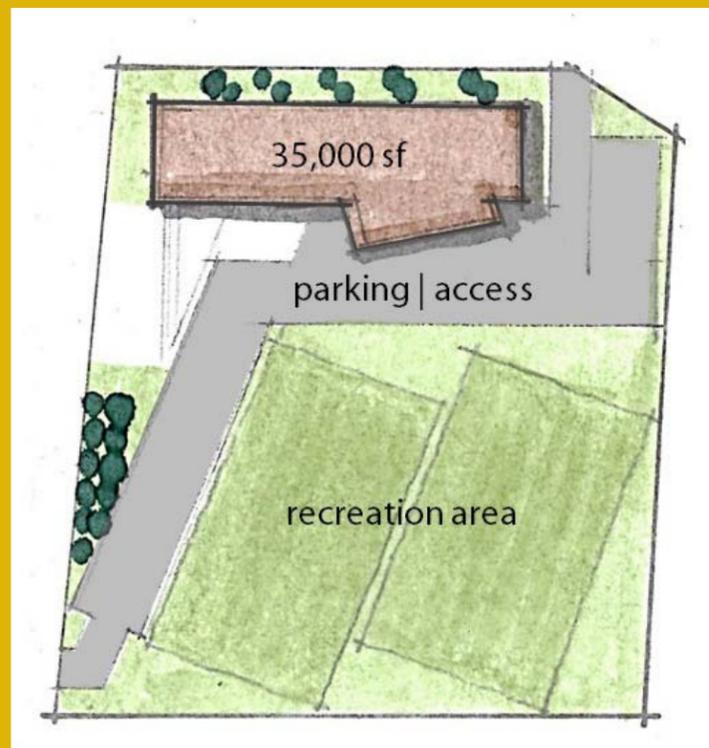
The Bob Henry Property is a 6.92 acre campus property that is located about a 1/2 mile to the east of the campus. The parcel is expected to expand to about 25 acres with expected additional land donations. A previous study proposes a road connection from the main campus to the Bob Henry Property, shown as a dashed line in the graphic on the right. This road is expected to meet the guidelines as stipulated in the Transportation Recommendations section of this document for campus streets (See page 72). A proposed 55,000 sf **Center for Energy & Manufacturing Excellence** has been previously envisioned for the property.

This Master Plan is focusing on growth capacity for the main campus. However projections suggest the possibility of moving excess square footage of buildings or recreation/open space to the Bob Henry property over time.

A **phased approach** for the development of the **6.92 parcel** is shown below. More space will be available for buildings and open space if all 25 acres become available.

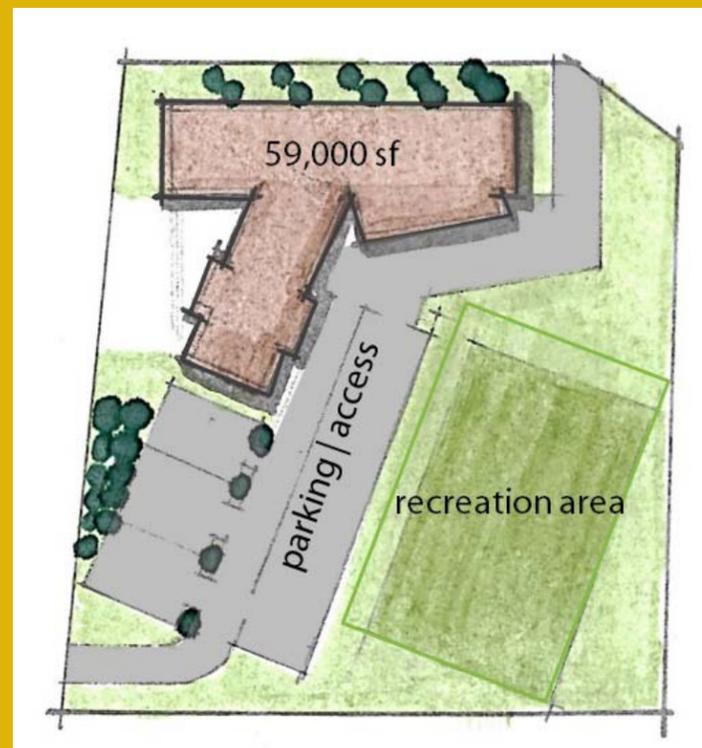


Phase 1



Goal: Balance building and recreational land use. 35,000 sf building footprint, 2 sports fields.

Phase 2



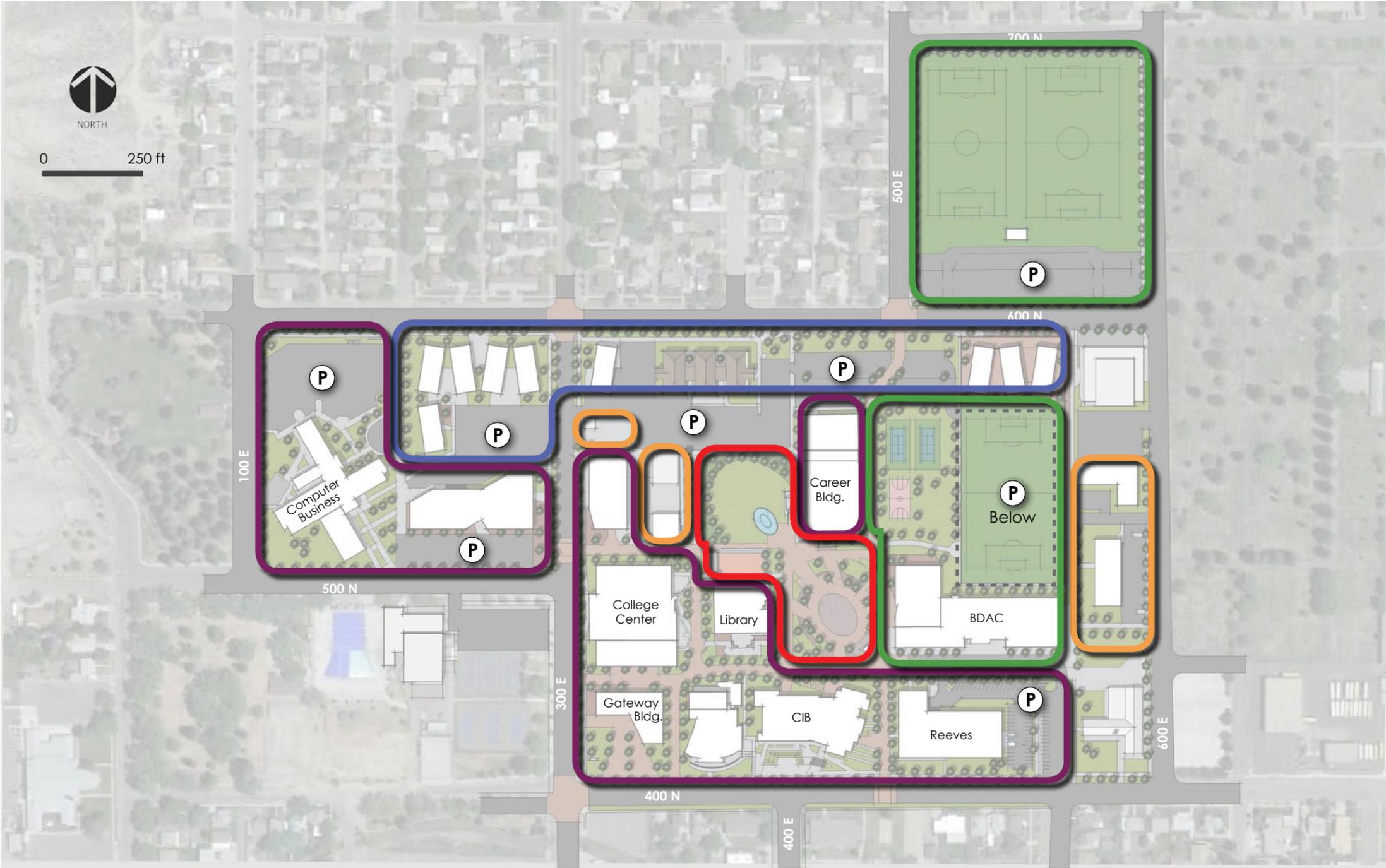
Goal: Balance building and recreational land use, while meeting expanding needs. 29,000 sf building footprint. 1 sports field.

Phase 3



Goal: Meet building space needs while configuring the site for secure yard and parking requirements. 91,000 sf building footprint.

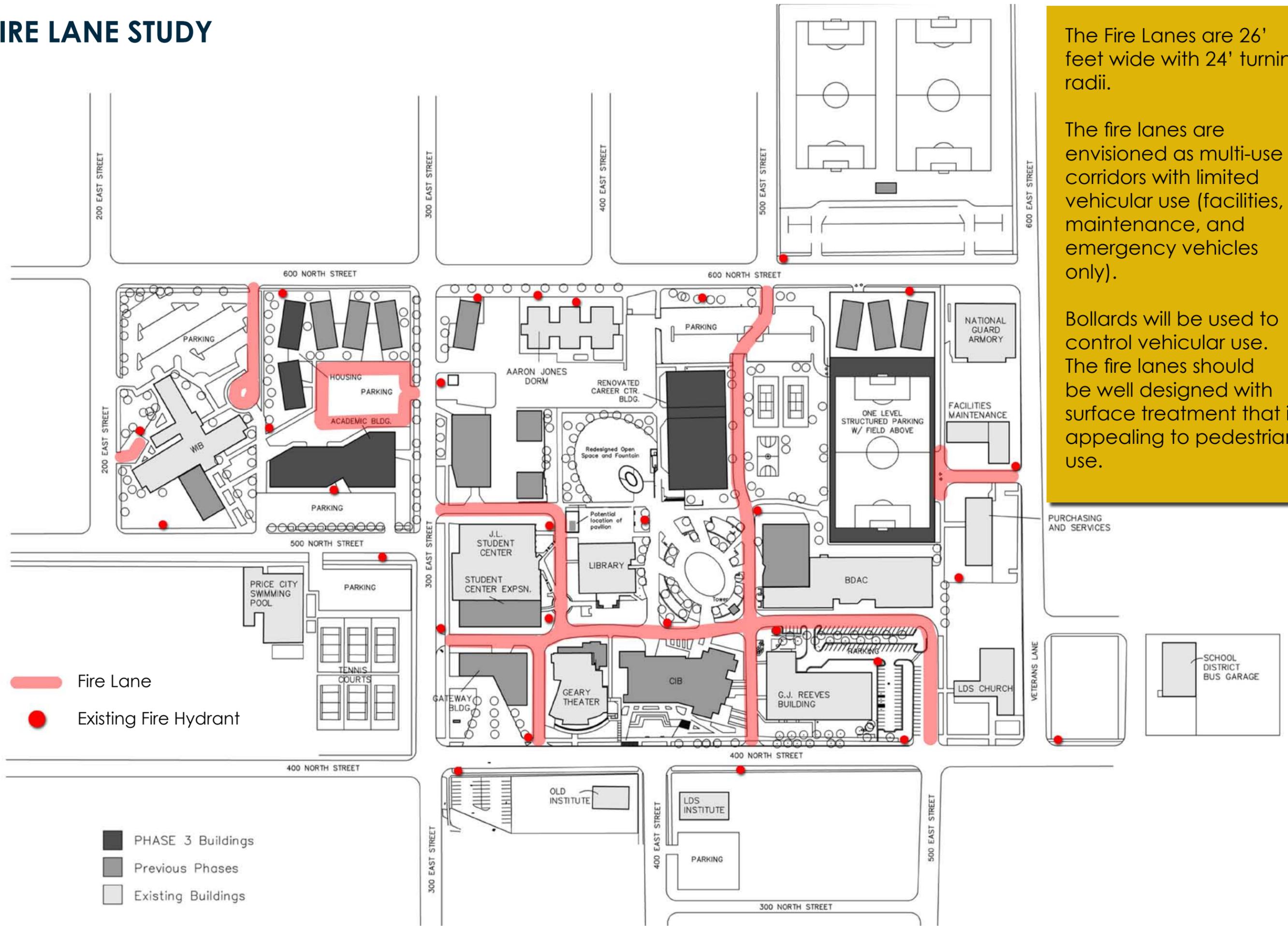
MAIN CAMPUS LAND USE PRECINCTS



Campuses are shaped by the way people use them. Daily activities by students, faculty and staff are framed by the campus layout. The above named precincts represent an organization of the campus that builds on existing conditions, while establishing land use relationships to promote an efficient and active campus.

- Housing Precinct
- Service & Support
- Academic Precinct
- Central Open Space
- Athletic/Rec Precinct
- P Parking

FIRE LANE STUDY

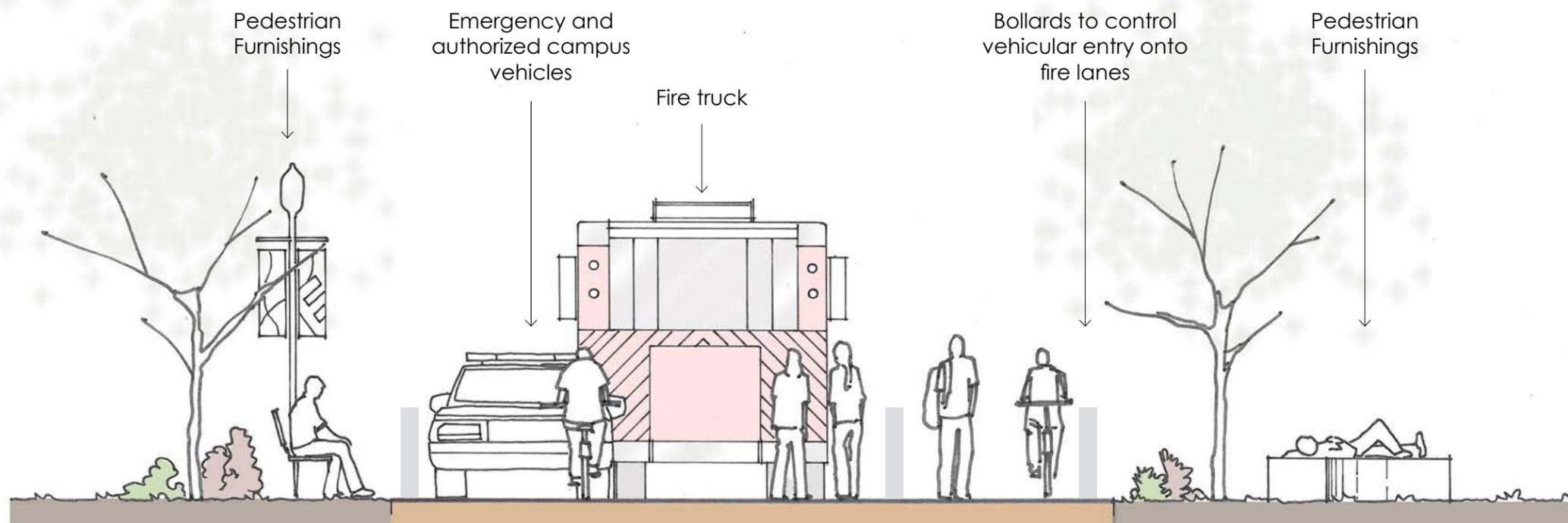
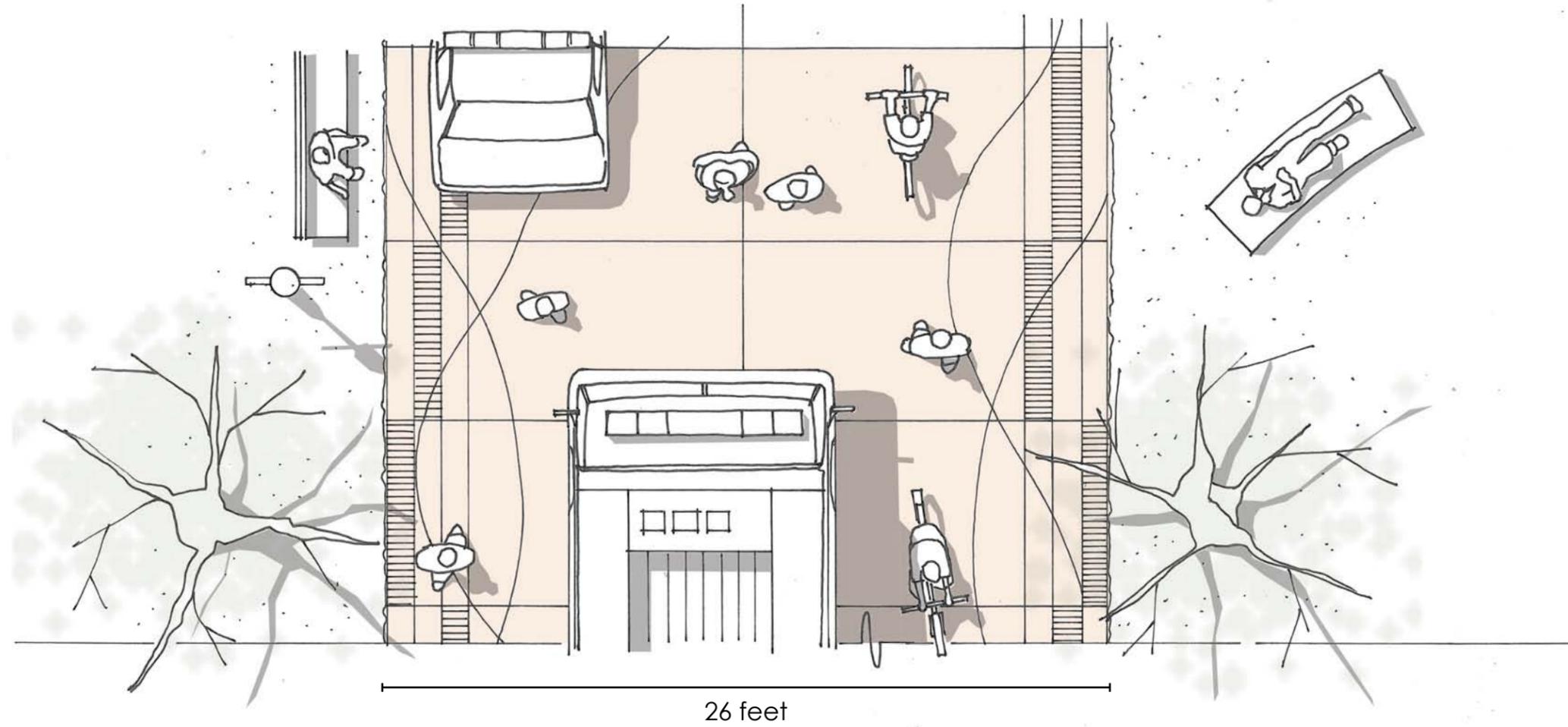


The Fire Lanes are 26' feet wide with 24' turning radii.

The fire lanes are envisioned as multi-use corridors with limited vehicular use (facilities, maintenance, and emergency vehicles only).

Bollards will be used to control vehicular use. The fire lanes should be well designed with surface treatment that is appealing to pedestrian use.

TYPICAL SECTION THROUGH FIRE LANE IN CAMPUS CORE



TRANSPORTATION RECOMMENDATIONS

FUTURE PLANNED CONDITIONS

The development and expansion of the USU Eastern Campus is planned in three phases: Phase 1 (10-15 years), Phase 2 (30-35 years), and Phase 3 (Full Build-out, 50 years).

PHASE 1

The planned expansion for Phases 1A and 1B of the USU Eastern Campus are shown in the maps on pages 50-57.

Vehicular Circulation

Phase 1 of the proposed USU Eastern Campus will not have any changes to roadways and routes, thus not having any impact on the current vehicular circulation. The roadway system around the campus is a mostly a connected grid which provides good access and distributes the traffic well to and from campus.

Roadway Sizes

Cross-sections were determined based on context, circulation routes, and parking access. In the Price City Parks and Recreation Master Plan, adopted in October 2013, bike lanes/paths are proposed on 300 East, 400 North, and 600 East around the USU Eastern Campus. To accommodate this, Fehr & Peers (The transportations consultants on this Master Plan) **proposes the following for street development to encourage active modes of transportation:**

600 North

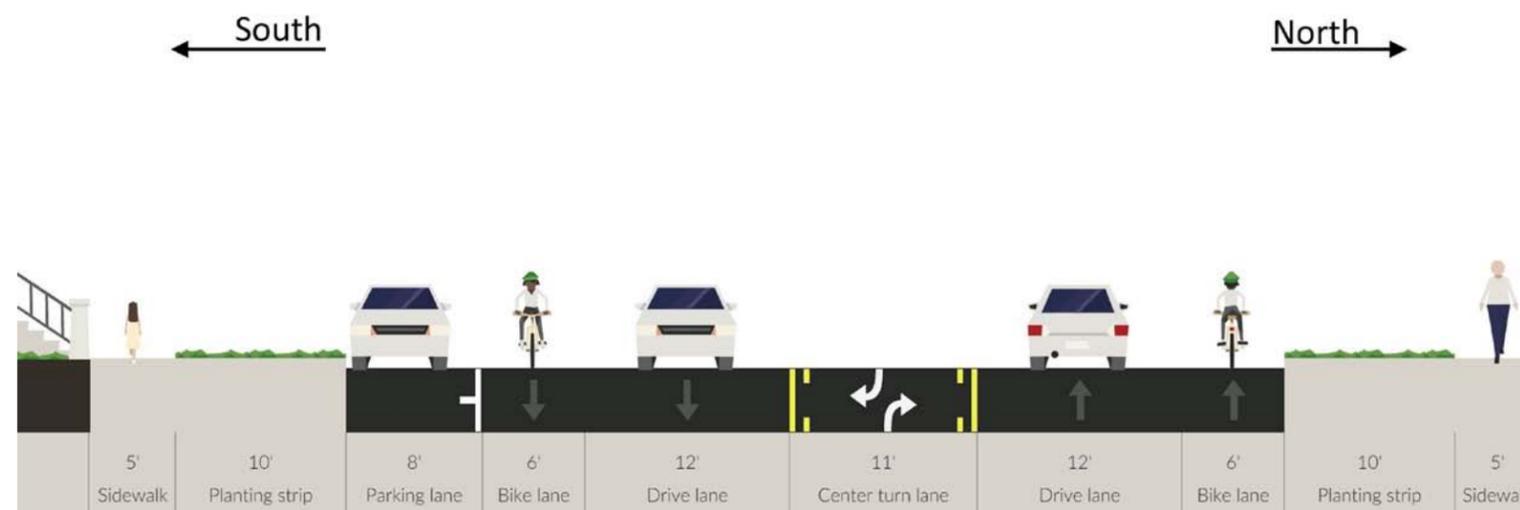
Bike lanes are not proposed on 600 North in the Price City Parks and Recreation Master Plan. Nonetheless, it is recommended that sharrow be painted on this roadway.

400 North

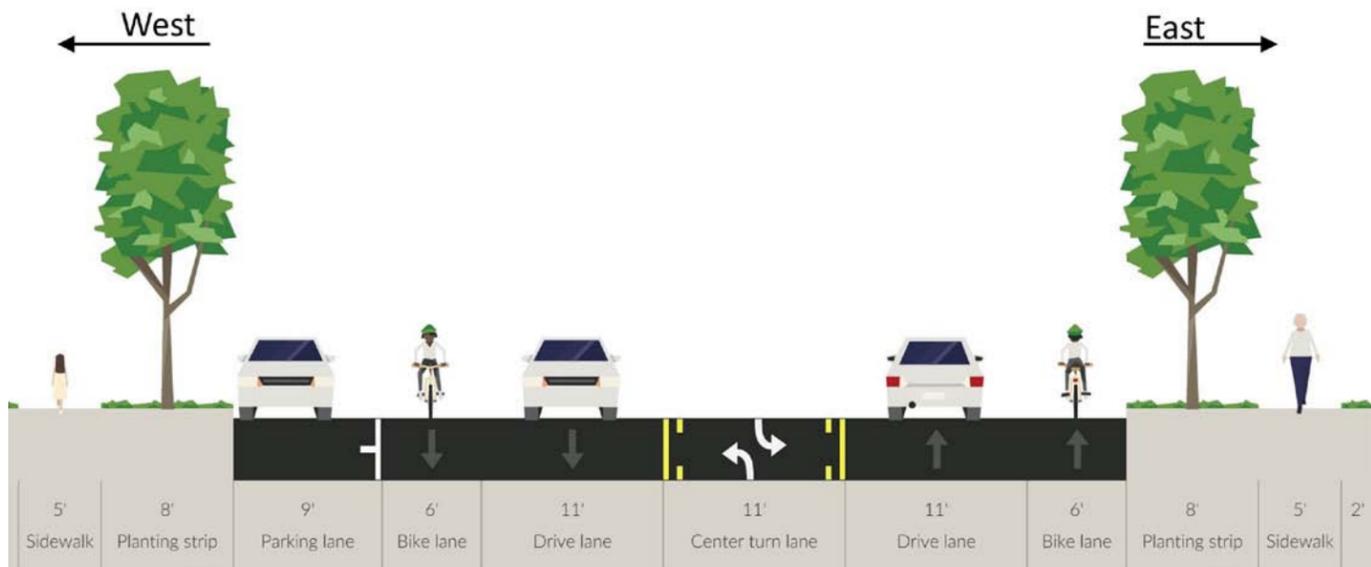
In order to accommodate bike lanes in each direction, 400 North will have to lose a shoulder/on-street parking on one side. Fehr & Peers recommends that the shoulder/on-street parking remain on the south side where residential houses exist.



600 North



400 North



300 East



600 East

300 East

A shoulder/on-street parking will need to be eliminated on one side to accommodate bike lanes in each direction. Fehr & Peers recommends that the shoulder on the east side be eliminated since there is less space for on-street parking.

600 East

It is recommended that the shoulders on both sides be eliminated on 600 North to install bike lanes.

BICYCLE & PEDESTRIAN ROUTES

In Phase 1A, the CIB is planned to be completed between the Geary Theater and the G. J. Reeves Building. This includes improved pedestrian connection with a walkway surrounding the area that connects to the new planned plaza area, where the existing SAC Building will be demolished. Pedestrians will also be well connected with a proposed trail surrounding the planned soccer field. In Phase 1B, pedestrians will have additional connections to the west around College Center with new walkways linking the plaza to 300 East. There will be improved pedestrian connections to the north with a path from the plaza to the parking lot north of the Career Center.

Currently, there are no bicycle facilities around campus. There are sidewalks around the campus on 600 North, 400 North, 100 East, and 600 East, and within campus on 300 East. Crosswalks are located on the east side of the intersection of 600 North & 100 East; at the intersection of 600 North & 300 East; on the north side of the intersection of 600 North & 500 East; on the north side of the intersection of 400 North & 600 East, at the intersection of 400 North & 500 East, on the east side and west side of the intersection of 400 North & 400 East, at the intersection of 400 North & 300 East, and at the intersection of 500 North & 300 East. Many of these existing painted crosswalks are fading, and maintenance should be considered as part of the plan. Additional crosswalks are encouraged at the following locations:

- 600 North / 400 East
- 600 North / 500 East
- 600 North / 600 East
- Mid-block on 300 East between 500 North and 600 North

Bike racks should be placed near all entrances to buildings, plazas, and other major destinations. Covered bike parking should be considered at major entrances to buildings.

PHASE 2

Vehicular Circulation

In Phase 2, new housing buildings are proposed to be built in place of the Nursing Home at the corner of 600 North and 300 East. The new housing will have a parking lot that can be accessed from both 600 North and 300 East, improving vehicular circulation.

Bicycle and Pedestrian Routes

There will be no changes to bicycle and pedestrian connection from Phase 1.

PHASE 3

Vehicular Circulation

In Phase 3, additional housing buildings are proposed to be built in addition to the new buildings in place of the Nursing Home at the corner of 600 North and 300 East. The access to the parking lot at 600 North will be closed, forcing vehicles to use 300 East to access the parking lot.

Bicycle and Pedestrian Routes

In Phase 3, there are no major changes to bicycle and pedestrian routes, however, the trail around the new soccer field proposed in Phases 1 and 2 will be taken out.

PARKING

Institute of Transportation Engineers (ITE) parking generation rate for a community college is 0.18 vehicles per school population for the average peak period, with a range of 0.12 to 0.36 per school population.

As the University continues to grow, the campus should aim for a parking ratio of less than 0.50 stalls per campus population in the shorter term (Phase 1) trending down to a ratio of less than 0.30 in the longer term (Phase 3). As the community surrounding this area grows and densifies, and additional transportation options are available such as frequent bus service, regional trails, and on-street bike facilities that would allow these parking ratios should be re-evaluated to determine if less parking can be supplied. The data in the table below shows that the projected parking supply for all phases is adequate to meet the recommended parking ratio. With implementation of some transportation demand management (TDM) strategies (i.e. transit system, improved active transportation facilities and programs, carpooling, ridesharing, on-campus housing, etc.), the ratio may be reduced further.

Campus parking per population

	BASELINE	PHASE 1	PHASE 2	PHASE 3
Total Projected Population, Calculated	1,804	2,663	4,135	5,780
Parking Per Person (Total Population at 350 sf)	0.69	0.49	0.36	0.27
Projected Parking Stalls From Plans	1,224	1,315	1,455	1,625

CONCLUSION

The USU Eastern Campus is located in an area that is not expected to have substantial growth in the next 20 to 50 years. The roadways that surround the campus appear to have excess capacity to accommodate campus growth as well as background community growth. Bicycling is an increasing commute choice for many people, though there are not many facilities around campus to accommodate bicyclists. The University should work with the city to install bicycle facilities on the surrounding streets. As the campus population continues to grow, TDM strategies should be evaluated and implemented to reduce the parking demand in the future.



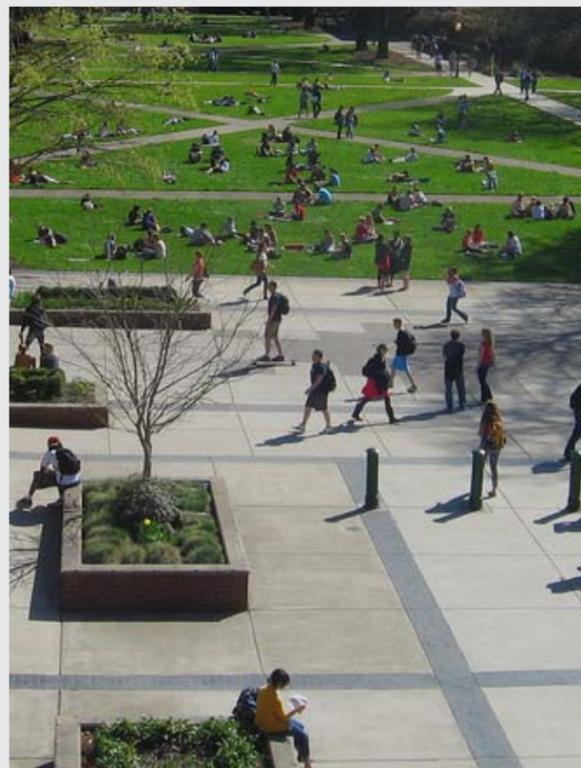
Routes and amenities for multi-modal travel enhances accessibility and ease of use on campus



Campus shuttle systems can be used to connect the main campus to outlying campus sites like the Bob Henry Property - if these sites are developed for use. The shuttles can likewise be utilized to bus students in from residences around the City.



Carpooling and rideshare programs can minimize the number of cars that come to campus and reduce the need for additional parking spaces.



Dedicated and safe pedestrian zones encourage walking on campus. Highlighted and well designed crosswalks will ensure pedestrian safety on streets surrounding campus.



A well-integrated parking garage can ensure that parking areas and garages are not dominant features on campus

ELECTRICAL & COMMUNICATIONS RECOMMENDATIONS

ELECTRICAL

SUBSTATION

Capacity

It is estimated that the current system has capacity for the planned campus growth for the full 50 year campus build-out. The current capacity of the substation transformer is 3/3.75/4.2 MVA, OA/FA, 55°C/65 °C, which is limited by the substation transformer size. Below table 1 summarizes the existing peak loads by month for the campus, based on the utility information provided, the peak 12 month load occurred in September and was 1176 kW or approximately 1307 kVA (at an assumed power factor of 0.9, no actual power factor data is available for the substation). These loads do not reflect or include anything for the new CIB building that is coming online summer of 2015. The current peak demand indicates there is approximately **56% spare capacity** in the existing substation transformer capacity.

Month/Year	Peak kW	Notes
January 15	792	
February 15	768	
March 14	732	
April 14	984	
May 14	984	
June 14	1008	
July 14	1044	
August 14	1152	
September 14	1176	Recorded 12 Month Peak
October 14	0	No Information Available
November 14	864	
December 14	756	

Table 1

Table 2 below indicates the estimated demand growth with each phase of this Master Plan assuming a demand power density of 3.66 watts/sf (this is 150% of the existing campus power density, which is currently 2.44 watts/sf), this indicates the substation transformer should have sufficient capacity for the planned growth for the full campus 50 year build-out. This should be re-evaluated as each building or load is added to the system to confirm actual square footage of buildings, assumptions, and estimates within the master plan.

Phase	Total SF	Peak kW	Capacity	% of Full Capacity
Existing Conditions	481,446	1,176	3,000	44%
Phase 1A (0-10 yrs)	505,953	1,264	3,000	47%
Phase 1B (10-15 yrs)	625,979	1,706	3,000	63%
Phase 2 (30-35 yrs)	735,793	2,108	3,000	78%
Phase 3 (50 yrs)	838,661	2,485	3,000	92%

Table 2

Recommendations

No significant modifications to the capacity of the electrical system are anticipated besides regular maintenance and replacement of components upon the end of their useful life. Since the substation is relatively new, built in 2003, major equipment replacement is not anticipated in the near future.

Redundancy, Reliability & Downtime - Recommendations

Expand the existing substation by installing the spare transformer permanently to provide redundancy in the substation that can easily switch between either transformer for planned maintenance, unplanned outages, or failure of substation equipment. Alternatively, a second substation could be created with feeder ties between them to allow for redundancy of power.

DISTRIBUTION SWITCHGEAR

Evaluations

The majority of the existing switchgear is in moderate condition, with no known major issues or concerns at this time and the anticipated lifespan for this is approximately another 20 years. Note that these switches do not meet the current USU standards for a new install. However, the switch installed in 2015 for the new Central Instruction Building does meet current USU standards and has an anticipated lifespan of another 40-50 years.

Recommendations

Maintain existing switches and replace them with new solid dielectric VFI pad mount switches meeting USU standards as required for new construction or as they reach the end of their useful life.

DISTRIBUTION CABLING

Evaluations

The cabling appears to be in moderate condition consistent with being in service for approximately 25 years. With an estimated life expectancy of 40 years it is recommended a plan be put in place have all the existing cabling replaced by 2030. Partial discharge testing of the medium voltage cabling could be done at the 30 year mark to identify any problematic cables with increased potential for failure and to assist with the priority of cable replacement if a phased approach is required or desired. The cabling size is more than adequate to handle anticipated full campus buildout capacity needs.

Recommendations

Replace cabling near end of useful life, which is estimated to be around 2030 and perform partial discharge testing as necessary to assess any high risk cable and termination concerns if phasing is required.

DISTRIBUTION TRANSFORMERS

Evaluations

The transformers appears to be in moderate condition consistent with being in service for approximately 25 years. With an estimated life expectancy of 50 years it is recommended a plan be put in place have all the transformers replaced by 2040.

Recommendations

Replace transformers near end of useful life, which is estimated to be around 2040.

COMMUNICATIONS

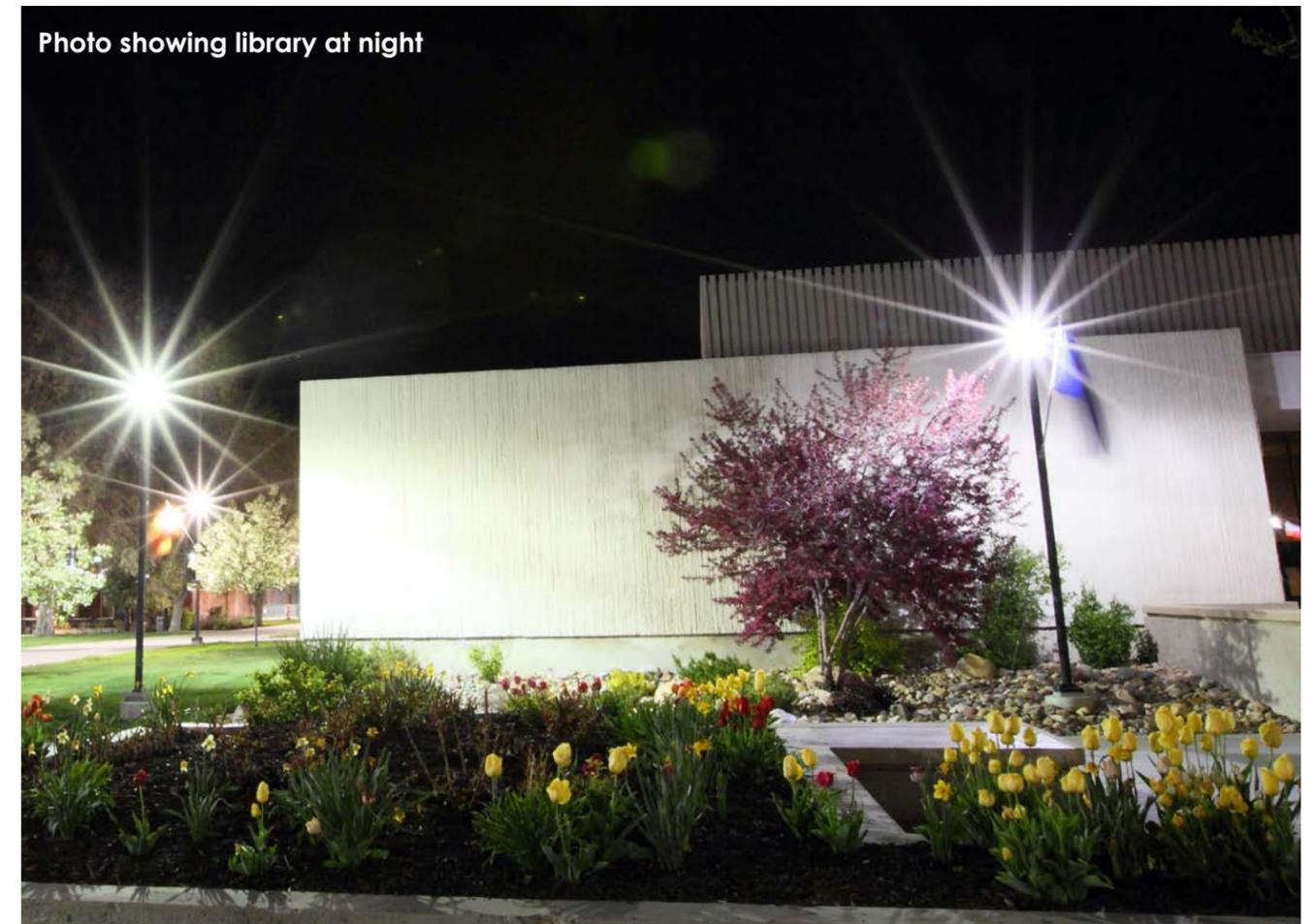
Evaluations

The existing fiber system appears to be relatively new and in good condition. The backbone copper cabling system is in varied condition depending on the location and building, but use of the copper cabling has been greatly reduced with the increased use of fiber.

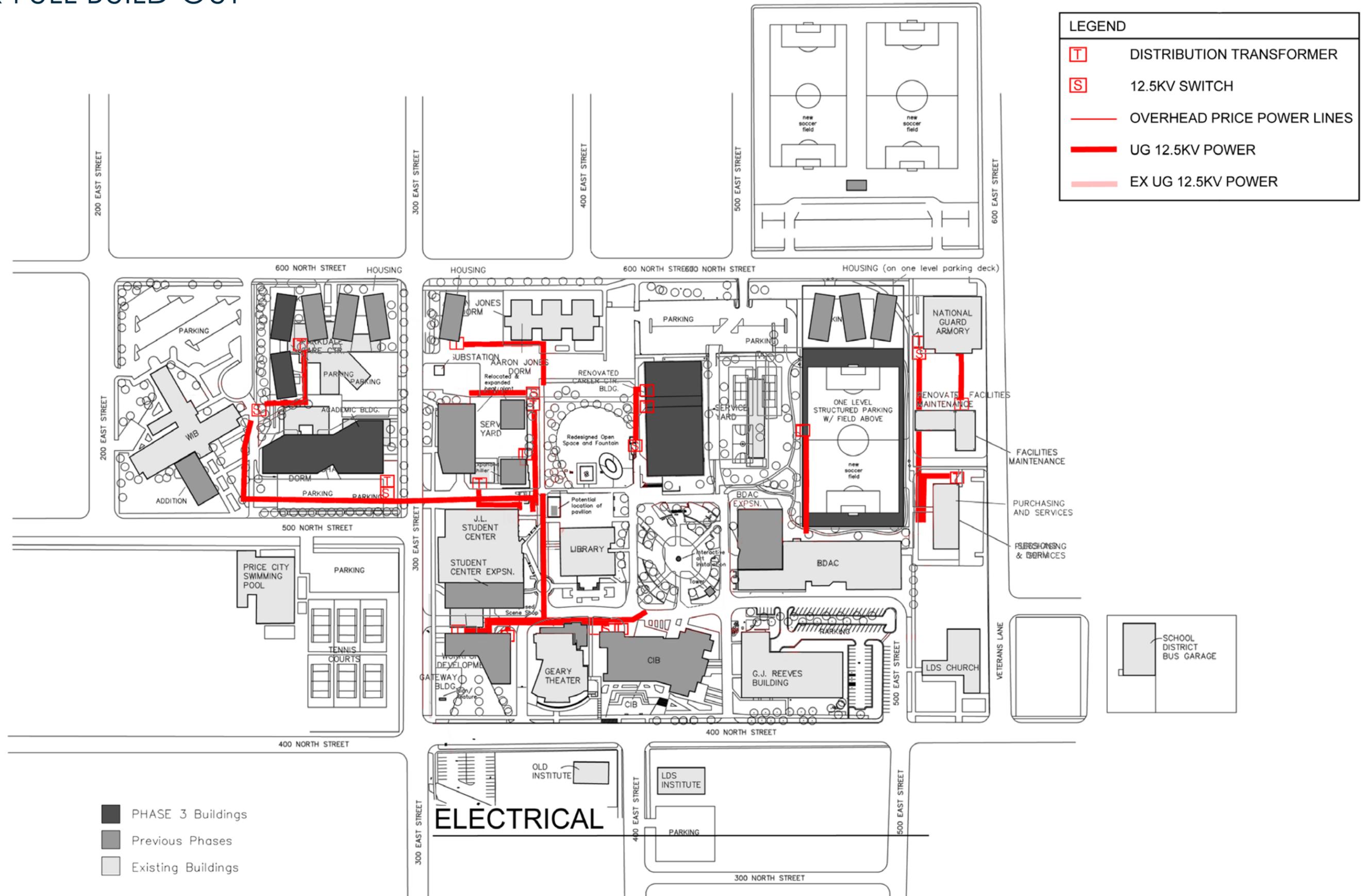
Recommendations

Provide replacement and upgrades of existing backbone cabling as required for ongoing maintenance and repair. Provide new fiber and copper cabling to new buildings as they come on line. Replace transformers near end of useful life, which is estimated to be around 2040. Provide a minimum of (4) 4" conduits to each new building TR in compliance with USU IT standards.

Maps showing the electrical and communication lines and systems proposed for each phase of the Master Plan can be found in the appendix of this document on page 116.



POWER FULL BUILD-OUT





CIVIL RECOMMENDATIONS

PHASE 1A

Phase 1A consists of providing water and sewer to a future rest room at the planned soccer fields north of 600 North. It is anticipated that a 3" sewer lateral and 2" culinary lateral will be required. A pavilion is planned north of the library and it is anticipated that a 2" culinary lateral will be installed here. The other two major projects in this phase consist of the CIB project and the Geary Theater Scene Shop addition. The CIB project utilities have now been installed and the Geary Scene Shop utility improvements have been designed and are set for installation. A 4" sewer lateral, a 6" culinary/fire line lateral, and a 4" roof drain lateral for storm drainage will be installed and tied into the existing systems for the Scene Shop addition. Installation is planned for 2015.

PHASE 1B

A majority of Phase 1B consists of expanding existing buildings and replacing existing buildings. It is anticipated that existing utility system laterals will be used for these areas. The new housing at the northeast corner of campus will require a new 8" sewer line lateral(s) and a 6" culinary/fire line lateral.

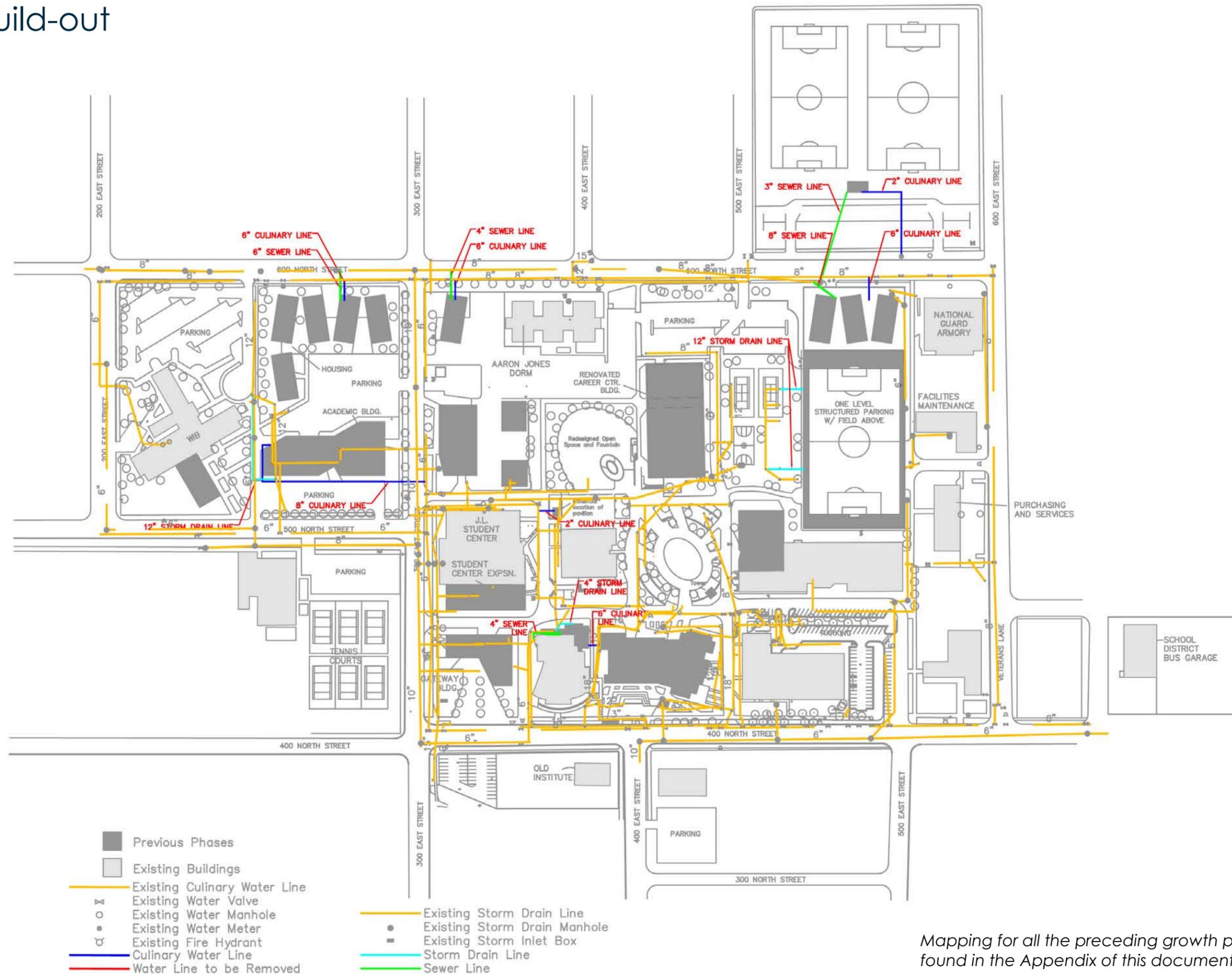
PHASE 2

Phase 2 also consists of expanding and replacing existing buildings that currently have sewer and water laterals. It is anticipated that these existing laterals will be used for these areas. New housing is planned that will replace the Care Center. This development will require new sewer and water laterals. It is anticipated that the sewer laterals will range from 4" to 8". The culinary/fire lateral will be a 6" line.

PHASE 3

Phase 3 consists of renovating the Career Center Building. It is anticipated that the existing utilities will be used for this building. Additional housing is planned near the Phase 2 housing plans. These will require 4" to 8" sewer lines with a 6" culinary/fire line. A new Academic Building is planned and a new 8" culinary line will be required to replace the existing line. A 4" sewer lateral will also be required for this building. It is anticipated that a new parking structure will be constructed in conjunction with a new soccer field. This parking structure will require (2) 12" storm drain lines that will tie into the existing campus storm drain system. The existing system is anticipated to be able to handle the additional flows.

Full Build-out



Mapping for all the preceding growth phases can be found in the Appendix of this document on page 124

MECHANICAL RECOMMENDATIONS

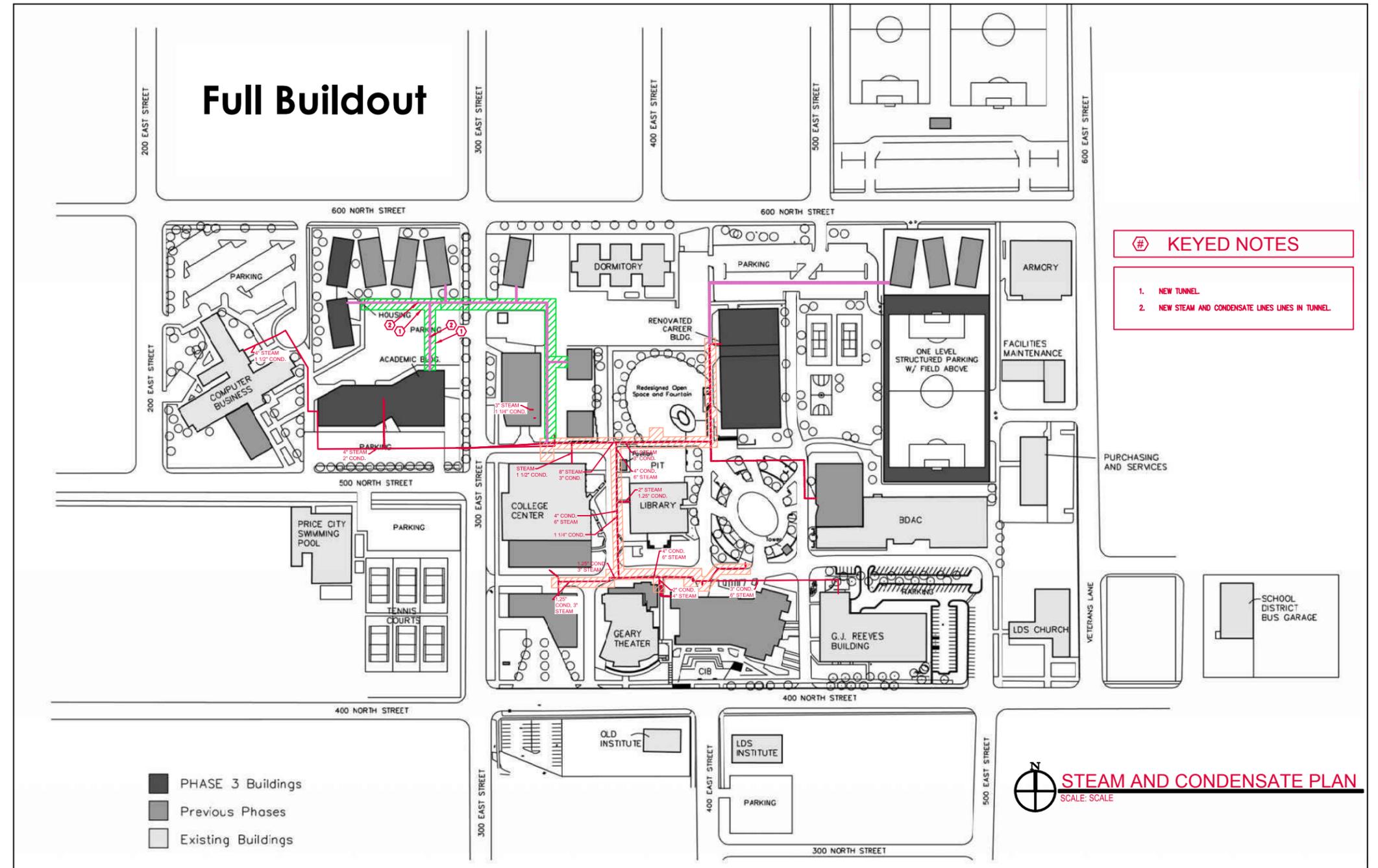
Maps for the heat system for each phase can be found in the Appendix on page 128

CAMPUS HEATING SYSTEM

The heating system analysis is simplified for use in the Master Planning purposes only. The heating load analysis is based on information from the Campus personnel that one boiler can normally handle the heating load on a design winter day. Future load analysis is based on a building square footage basis. Pipe sizing is based on steam and condensate simple sizing charts. As buildings are designed, a more comprehensive analysis will be required.

The Central Heat Plant and steam and condensate piping distribution system will need to expand as the Campus is expanded. Boilers will need to be added to accommodate additional buildings. Steam and condensate piping will be extended to the new buildings. The steam and condensate piping mains will be run in tunnels. Steam and condensate runouts to each building will be direct buried. The tunnels will conform to the USU East Campus standards. All new buildings should use the Campus Heating System as the primary heat source for consistency and for efficient maintenance. Also, the Campus Heating System has a backup oil storage system in case the natural gas service is interrupted for any reason.

A steam pressure reducing station will be provided at each building to reduce the pressure to 15 PSI. Steam-to-water heat exchangers will be provided at each building for space heating and for domestic water heating.



Pressure powered condensate pumps will be provided at each building with sufficient head pressure to pump the condensate back to the Central Heat Plant. One boiler can normally handle the heating load on design days. This provides N+1 redundancy.

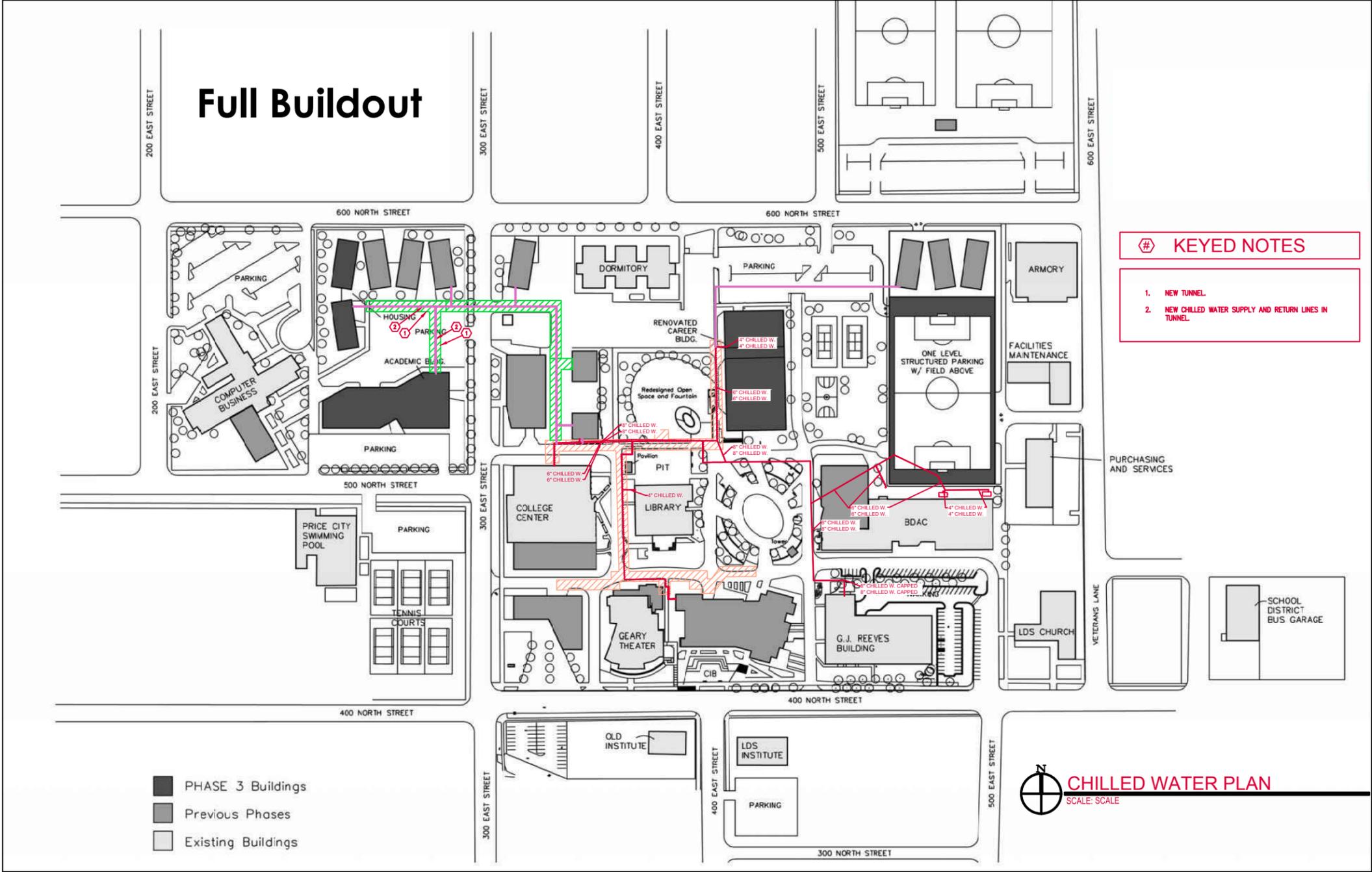
At Phase 1B, a new 500 Horsepower boiler will be required. This will be adequate to handle the build-out of the campus and still maintain the N+1 redundancy. At campus build-out, there will be three 500 Horsepower high pressure steam boilers.

CAMPUS COOLING SYSTEM

Future load analysis is based on a building square footage basis. Pipe sizing is based on water piping simple sizing charts. As buildings are designed, a more comprehensive analysis will be required.

The chiller plant and the chilled water distribution system will need to expand as the Campus is expanded. Chillers will need to be added to accommodate additional buildings. Chilled water supply and return piping will need to be extended to the new buildings. The chilled water piping will be run in the steam tunnels. All new buildings should use the Campus Chilled Water System for the primary cooling source for consistency and for maintenance efficiency. In new building spaces that require cooling 24 hours per day, 7 days per week, all year around (communication rooms, etc.), small packaged DX refrigerant systems should be used.

Two of the three chillers can normally handle the cooling load on design days. This provides N+1 redundancy. At Phase 1B, a new 400 ton chiller will be required. This will be adequate to handle the Phase 1B of the campus and still maintain the N+1 redundancy. At Phase 2, a new 400 ton chiller will be required. This will still maintain the N+1 requirement. No other new chillers will be required for Phase 3. At campus build-out, there will be three 250 ton chillers and two 400 ton chillers.





5. design guidelines

WHAT ARE DESIGN GUIDELINES?

Across institutions, architectural design guidelines represent a spectrum of approaches to development. From highly prescriptive to adaptable. USU Eastern Campus at Price encourages continuity of character as a campus without strict uniformity of architectural style or material palette for its buildings. Achieving continuity of character, while also acknowledging change, is difficult. Thus design should be guided in the future by a few strong design principles. The design guidelines that follow are an effort to communicate to those who will design portions of the evolving USU Eastern Campus environment the elements and attitudes the campus community feels will produce both a coherent and a dynamic built environment.



OVERALL DESIGN PRINCIPLES

The following overall guiding design principles have been established for new construction on the USU Eastern Campus. The principles are:

- New buildings are to reflect the general architectural character of existing buildings on campus.
- Buildings, landscape, and infrastructure improvements should incorporate elements of sustainability as appropriate and financially feasible.
- Key nodes and gateways must be identified and capitalize on major entrances.
- New structures shall be limited in height to three stories.
- Building layout must create and shape outdoor spaces to develop a network of interconnected and diverse landscapes, which include quads, courtyards, plazas, squares and areas that are designed to maximize opportunities for social and intellectual exchange.
- Structures shall be designed to take advantage of views.
- Parking should be adequate to support space needs, but not be a dominant feature from the campus perimeter. The design should be softened by integrating landscaping and pedestrian walkways.

PRIMARY ELEMENTS

Six primary elements of architectural design will provide aesthetic continuity and quality to the campus as it is built out over time. These include:

- Building massing and façade articulation
- Horizontal hierarchy and building entries
- Building heights and vertical hierarchy
- Fenestration and sunscreens
- Stairways and circulation
- Materials and color palette

The main campus in Price is located on a 38 acre parcel and is generally flat. The campus is located in a built-up area and is surrounded by homes, institutional, and public uses. The campus can be accessed by through all bounding roads by vehicular and pedestrian traffic.

A 6.92 satellite parcel (with the potential of growing to 25 acres) is located about 1/2 mile from the main campus.

ARCHITECTURAL GUIDELINES

BUILDING MASSING AND FACADE ARTICULATION

The following are guidelines relative to the massing and articulation of new buildings:

- New structures shall be limited in height to three stories, not including spaces that may demand additional height, such as fly towers, mechanical and elevator penthouses, and stair towers where roof access is required.
- New structures shall be predominantly rectangular in shape when facing major outdoor spaces, to respect the irregular orthogonal grid of the Campus, unless otherwise indicated.
- Modulated facades add interest to the campus through a variety of the height of building forms to create distinct massing elements.
- Interaction of indoor and outdoor spaces, in the form of courtyards and other in-between spaces, is a significant element of building character and form development
- Major building masses shall have primarily flat roofs, with roof forms serving as architectural accents at entries and major circulation zones
- Circulation elements - stairs, walkways, etc. - may be expressed as separate components.
- Unique structures, administration, recreation, student service, and performing arts buildings, should be iconic and be articulated differently.
- Care should be taken not to cast shadows on open spaces or important walkways, particularly during mid-day.

HORIZONTAL HIERARCHY & BUILDING ENTRIES

New buildings will have clearly defined entrances and exits and shall follow the guidelines outlined below:

- Buildings following the massing and height recommendations will be primarily horizontal. Vertical articulation should be used to add organizational structure and visual interest.
- Building facades that occur at the terminus of a street or a site gateway, quad, or anchor a distinct site present major opportunities for articulation and change expression.
- Each new building shall have one identifiable primary entry. The entries shall be aligned internally to provide a direct visual and physical connection between adjacent structures.
- Larger openings can be used to express principal entries, gateways, or atrium features. These should be inviting, yet energy efficient. During evening hours these spaces shall be well lit, serving as beacons on the campus.
- Building entrances are frequently the meeting places, and gathering places of those using buildings, and should be designed to encourage interaction.
- For secondary building entries can serve as a means of vertical interruption or articulation of horizontal compositions, particularly on long facades.



ROOF OVERHANGS, COLONNADES, AND LANDSCAPED BUILDING EXTENSIONS

Arcades, roof overhangs and structured landscape spaces at the edge of buildings are important features in new buildings, designed to protect pedestrians from inclement weather including both extreme heat and sun, as well as rain and wind. By integrating these features into new buildings, students, faculty, and staff will be able to move throughout the campus in a protected manner, facilitating movement from one building to another. Overhangs, when used, can be incorporated into the architecture to serve as weather protection.

Arcades shall be a minimum of six feet clear in width. Arcades should be light and open yet still create a distinction between circulation and plaza maintaining 90% open front. Spacing of columns should be approximately 15' - 0". Landscaped building extensions include pergola, low-medium high retaining walls, and raised walkways extend the pedestrian zone to the building edge and should be partnered with transparent walls to engage associated academic or campus community spaces.

Roofs are one of the final ingredients in the composition of a building, and again, play not only a functional role but an aesthetic one as well.

- Roofs shall generally be flat, yet designed to drain appropriately.
- Sloped roof elements shall support user identity of prime functional spaces.
- Roofs shall be light in color to reflect sun and reduce heat gain.
- USU may pursue alternative energy sources on roofs.
- Green roofs, if feasible, are permitted.
- Roof terraces, if well connected to interior spaces, are encouraged.

WINDOWS AND SUNSCREENS

Window design is not only one of the most important aesthetic considerations in establishing the overall architectural character of a building, but it is also fundamental to achieving optimum energy efficiency and comfort for building occupants. Incorporating features that maximize natural daylight - yet minimize glare; allow building occupants control of their environment through operable windows; and minimizing the

need for air conditioning and artificial light are all features that should be considered in the building's design. The choice of glazing is also important in ensuring good daylighting. A wide range of glazing is available that offers both good admission of light as well as low heat gain. Heavily tinted or reflective glass is not permitted. Specifically:

- The placement of windows shall be oriented and designed to maximize the climatic features of the site, including views.
- Where appropriate, windows can be operable.
- Windows are generally preferred to be recessed from the exterior surface of the building.
- Windows should be placed to light and provide views to internal spaces, but also to give walks and streets the security and richness that derives from the visibility of adjacent activity.

STAIRWAYS AND CIRCULATION

Stairways are not only an important functional element of buildings, but, if properly designed, can be the vertical movement of choice for the majority of the buildings' occupants, diminishing the need to rely on elevators for vertical transport. They can also be an opportunity for chance encounters and social interaction, if designed as an integral part of the campus experience, rather than a purely practical application. As such,

- Building entrances should be visible to those arriving on the campus, and should contribute to the life and activity of streets and walks.
- Where buildings front on public streets there should be public entrances and attractive, open streetscape facing the street.
- Stairways shall have fenestration to allow for visibility into and out onto campus.
- Stairwells shall be well lit and serve as secondary beacons on campus during evening hours.
- The permeable nature of the ground floors of buildings on campus fosters a high level of interaction between building and user.
- Passageways through buildings are an important element in the campus system of circulation and a link between campus open spaces.

BUILDING MATERIALS

The articulation of materials in a way that reveals the construction of the building is common on the USU Eastern Campus, and follows directly from the mid-20th century modernist tradition of many buildings on campus. This tradition lends a quiet sense of order which modulates the scale of buildings on campus and should be continued in new development. The exterior building materials shown in these guidelines express a range of materials approximating or complementary to those of the existing USU Eastern Campus. They offer a suggested range of materials but also allude to the clarity and simplicity of material use represented by the buildings of the existing Campus. These materials also assume some consideration of both initial and maintenance costs for the lifetime of new buildings. Alternative materials to those shown may be considered but must be approved. Building materials have been grouped in two categories: Primary Materials and Accent Materials.

PRIMARY MATERIALS

The following materials are suggested for primary exterior surfaces of buildings on the Campus:

Masonry – USU Eastern has developed approved brick and terra cotta colors to provide coherence to the campus. Concrete Masonry Units (CMU) may only be used in limited applications at the building base or as accents, but should not comprise more than one eighth of the building envelope.

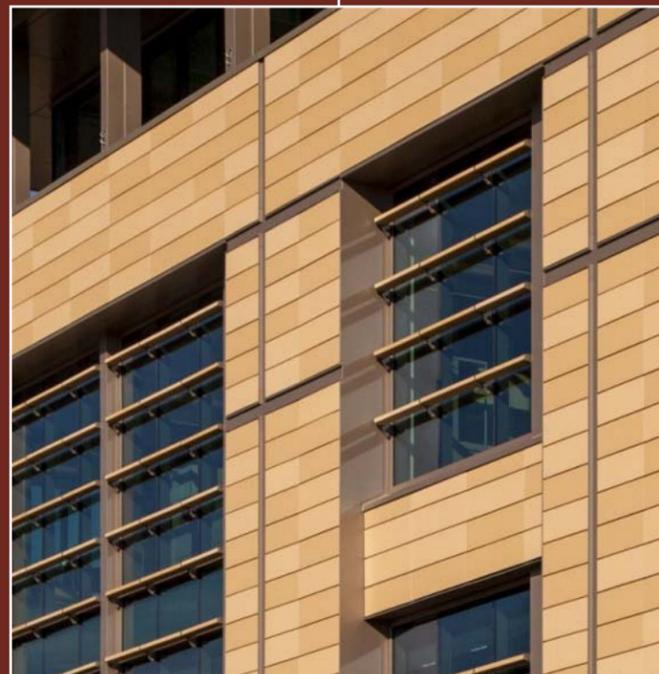
Metal and Glass Window Wall Construction – significant sections of primary building facades may be storefront or curtain wall with relatively clear glazing. No highly tinted glazing will be acceptable. High performance glazing with improved thermal characteristics highly encouraged.

Metal Panels should have a limited application as accent or background materials. Metal panel applications must follow these requirements:

Brick, used to create large facades, should be articulated to illustrate wall thickness and add shadow lines.



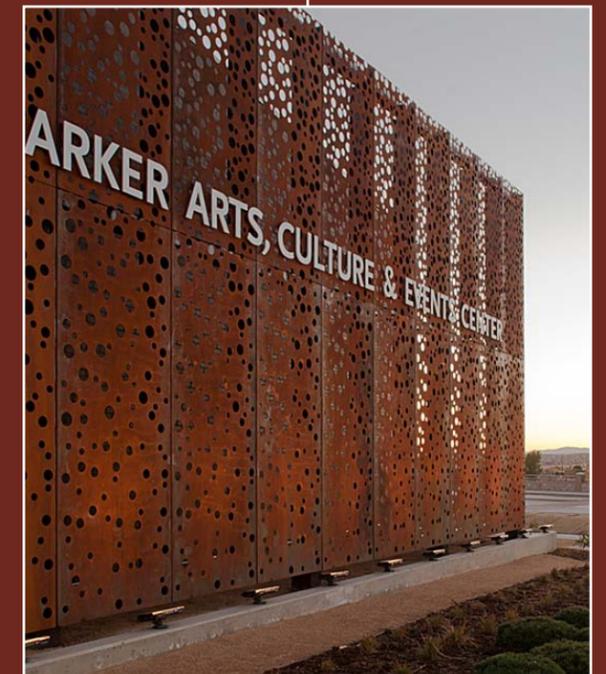
Terracotta as a primary facade treatment provides the same consistent architectural impression as brick masonry.



Curtainwall systems with a combination of clear and spandrel panels help articulate building facades and illustrate programs within.



The use of COR-TEN, or other self-healing" material, as an accent material provides a sense of permanence.



- Face fastening metal siding is not an appropriate exterior finish, except at maintenance facilities.
- Where metal panels have received painted finish, the substrate must be non-ferrous and finish should be Kynar (maintenance-free, durable, and reasonably non-fading over the lifetime of the facility).
- Consider natural finish for metal panels (zinc, copper or COR-TEN) which have recycled content and develop a “self-healing” patina.

ACCENT MATERIALS

The following materials are suggested for secondary exterior surfaces of buildings and to be used with discretion:

- Stone – locally produced materials (such as stone) may be used as accents, with the approval of the owner.
- Exposed Metals – as defined under metal panels above.



View from the interior of CIB towards the Reeves Building.

Metal panels should serve in limited applications as an architectural accent or background material.



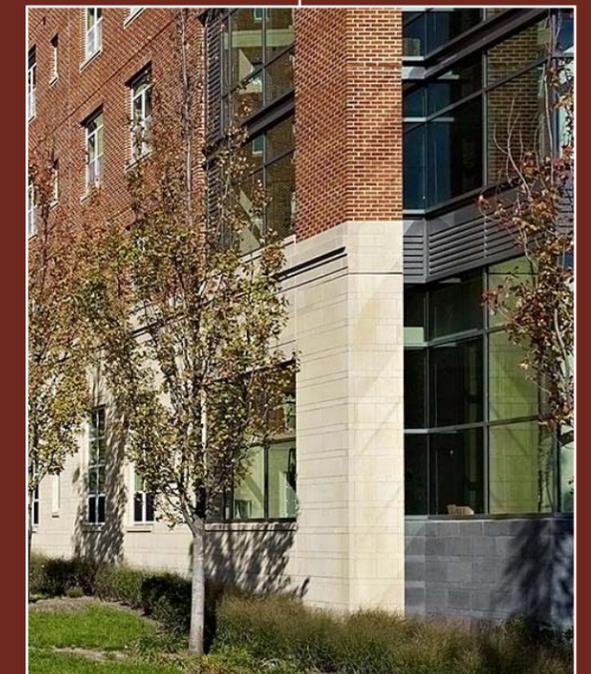
Building and landscape design should be sympathetic in their response to creating indoor and outdoor amenities.



The transition from horizontal to vertical material use can be used to highlight building entrance and prime uses.



Stone as a base material to a primarily brick building accentuates the ground plan and creates a human scale



SITE DESIGN GUIDELINES

The following site design guidelines are proposed for the campus to serve as a framework within which the site design and landscape is developed.

GENERAL SITE DESIGN GUIDELINES

Proposed by James Huppi, Landscape Architect, USU

- 1. Site furnishings** shall be consistent throughout campus (benches, tables, chairs, trash receptacles, etc). The smallness of the campus makes it difficult to have much diversity in site furnishing without looking hodge-podge or cluttered. Tasteful differences in a piece or two at a main entrance to a building that complement the building and the campus standard may be considered.



- 2. New and existing buildings shall have trash receptacles** at major building entrances. (If recycling is available in Price, these should be receptacles that have multiple openings for pre-sorting of recyclables from trash).
- 3. Sloped landscaped areas** greater than 4:1 should not be planted with turf. Use groundcovers, perennials, shrubs etc.

- 4. Turf areas** shall be designed in a manner to allow for mowing with large deck mowers. There shall be concrete mow-strips between turf and planter areas.

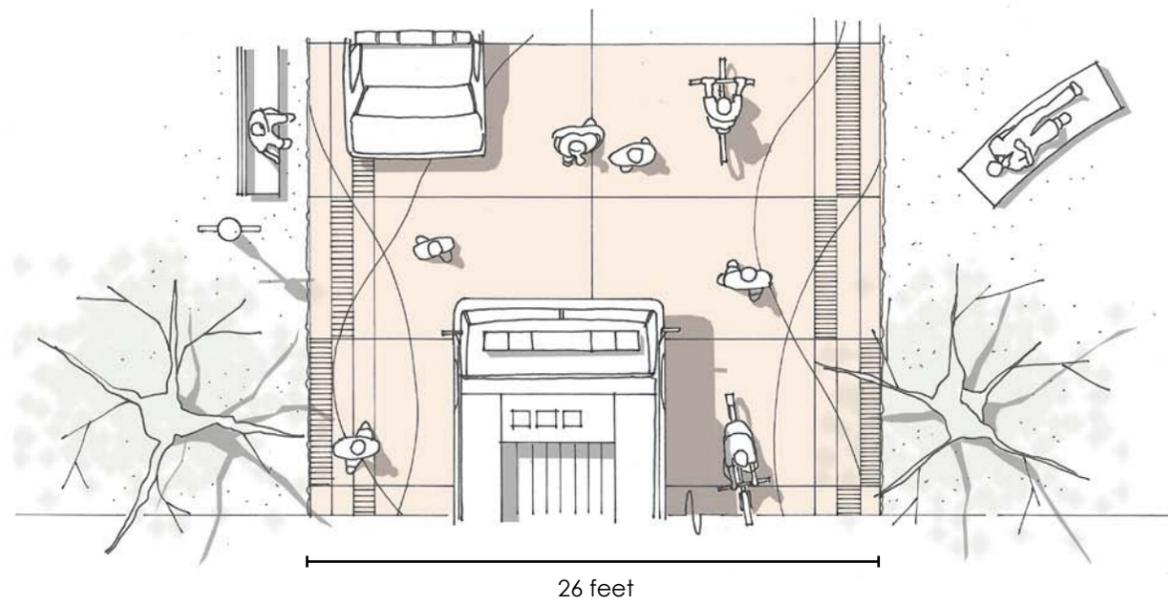


Mow strips between turf and planter areas. Colorado Mesa University. Design by CRSA

- 5. Small areas of turf** should be avoided. Combine with larger areas or plant with herbaceous plant materials.
- 6. Perennial beds** should be used for color accents to building entrances in place of annuals. They should be designed to provide some color from April through October. Natives or water-wise plants should be considered and given preference.
- 7. Planter beds** should not be over planted. Maintain a 14-16-inch space between plants at mature growth. (This makes maintenance easier and conserves water).
- 8. Irrigation systems** for planter beds and moderately sized turf areas should use drip or low-precipitation rate nozzles. Irrigation controllers that are capable of cycle-n-soak and are weather based should be specified. Master valve/flow meter assemblies shall be provided for sub-mainlines to monitor flows and provide emergency shut-off capability.
- 9. In areas where hose-bibs** are not available, install quick coupler valves to provide for spot watering of trees and planters, and to winterize the system. Isolation valves shall be provided at intersections of mainlines such that portions of mainlines can be isolated for repairs and/or maintenance without turning off the entire system.

10. Trees in turf areas shall be planted a minimum of 8-feet from any hardscape. There shall be mulched tree rings a minimum of 3-feet in diameter centered on the tree. The root crown shall be 1-2 inches above grade and mulch shall be kept away from the root crown.

11. Reduce the scale of fire lanes with colored concrete, textured concrete, changes in scoring patterns, or a combination of any of these methods.



12. Minimum sidewalk widths shall be 1-foot wider than the snowplow blade width used to clear the walk (6 feet). The campus uses a snowplow blade width of 5 feet.

13. Screen service yards with fencing softened with landscape plantings.



Green screen/fencing of service yards

14. Whenever feasible use bio-swales for storm drainage infiltration, if soil condition allows for percolation within 24-48 hours.

15. Large outdoor gathering areas should have dedicated power drops with 100 amp service in locations that consider the uses of the areas.

16. Pedestrian lighting and tree locations shall be coordinated between Electrical Engineers and Landscape Architects to avoid blocking safety lighting of sidewalks.



An opportunity for a bioswale in a parking lot



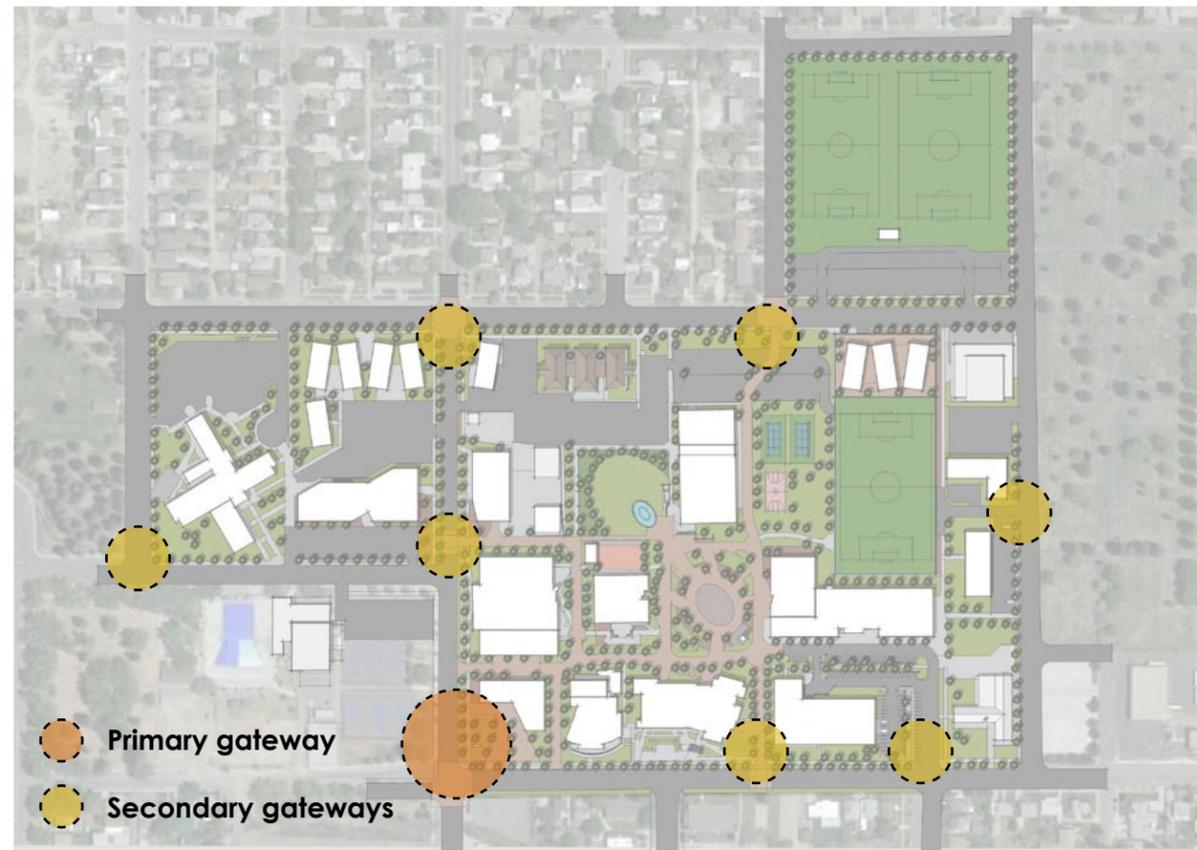
Existing sidewalk on campus lit at night

CAMPUS GATEWAYS

In the past, and typically, colleges had been seen as academic entities that were separate from the communities in which they resided. They were seen as places that were exclusive to students, faculty, and staff and were not well integrated into the fabric of these communities. There was a distinct “town-gown” split.

Recent trends and the drive towards more community focused education has made college campuses that happen to be in close proximity to communities a stronger part of the local identity. A strategy has been the creation of physical campus environments that highlight the campus as a special place that is porous enough for community members. As such, campuses are programmed to open their doors for community events including seminars, talks, sporting events, etc.

One of the goals of this Master Plan is the creation of stronger connections between USU Eastern and the Price community. One of the strategies identified during the process was the creation of gateways around the campus core. These gateways were to make the campus legible to the visitor or patron as being in a unique place within the City of Price while also providing “open arms” to the community.



Primary Gateway



this area remain the primary gateway to the campus. An entry plaza and gateway building (see page 66) is planned for the area.

The primary gateway to the main campus has been identified as the area northeast of the intersection of 300 East and 400 North. This area has historically served as the main front door of the campus.

A monument sign shown here, is currently located at the corner. The intersection is busy with frequent vehicular traffic in all directions. Foot traffic is, however, not very significant. There was a general consensus during the planning process that



The primary gateway should be welcoming and have elements that will encourage people to visit the campus. Paving materials, planting, and furnishing should stand out significantly from surrounding treatment. Trees should be planted for shade and a water feature introduced. Interactive art can also encourage people to linger and animate the area.



Secondary Gateways

The secondary gateway locations identified for the campus are shown on the map on the previous page. The secondary gateways are either pedestrian or vehicular gateways. These gateways should have elements that are similar to that of the primary gateway, but on a smaller scale. The objective of creating these gateways is to make entryways to the campus visible from the periphery to vehicles and pedestrians.

Some elements that will help identify these gateways may include a combination of the following:

- Signage including monument signs, with USU, or USU Eastern specific, themes, logos etc.
- Art and Sculpture (interactive & passive)
- Paving material change and micro-plazas
- Trees, planting, and shrubs
- Water bodies/fountains
- Banners, flags, lights



A monument sign at a USU Regional Campus

SIGNAGE AND BRANDING

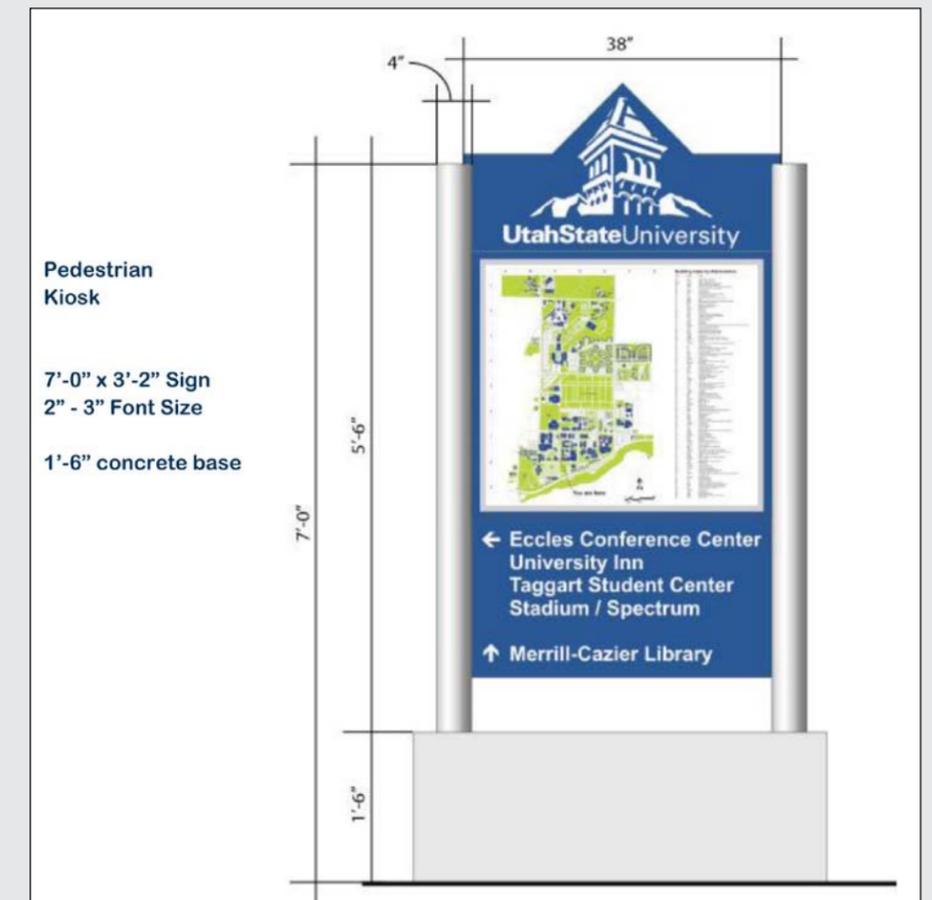
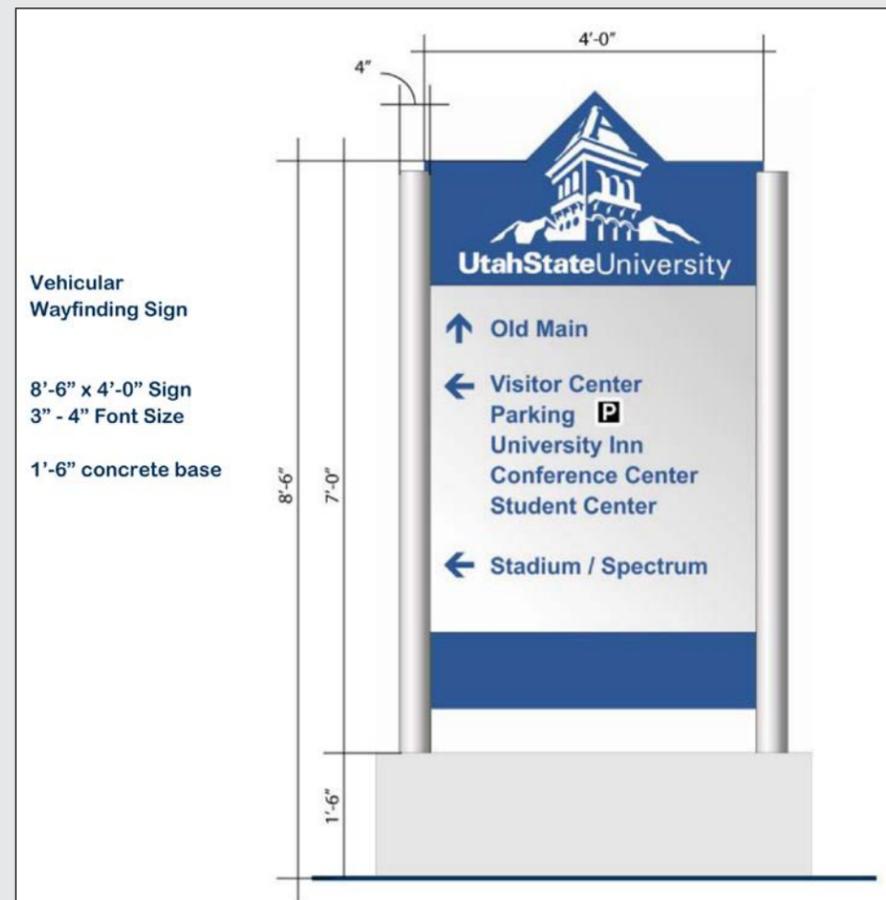
Signage and wayfinding elements are critical in the landscape for ease of use and navigation of the site by both motorized and non-motorized traffic. Signs can be directional (for wayfinding), informational, or aesthetic. Signage design is not random and is an integral part of site design acting as a unifying factor for individual buildings and sites.

USU has **Wayfinding and Signage Guidelines** adopted for its campuses. This ensures that all USU campuses have a similar theme for signage and branding - while allowing for a local or regional deviation when appropriate. These guidelines can be accessed at this link: <http://www.usu.edu/facilities/docs/SignageMPFinal.pdf>.

The following chapters in the guidelines are relevant to the Price campus and should be adhered to generally:

- Graphic Standards
- Wayfinding Plan
- Exterior Signage
- Interior Signage
- Specialty Signage
- Temporary Signage

This scope of this Master Plan does not include **specific signage and branding guidelines for the Price campus. It is however advised that this be drafted and implemented in the near term as the campus grows. This should be in conjunction with USU Eastern's Visual Identity Program: http://eastern.usu.edu/files/uploads/VIP_09-24-2012.pdf*



A sample of signage standards in the USU Wayfinding and Signage Guidelines

OPEN SPACE NETWORK

Six (6) major types of open spaces are proposed for the campus in the Master Plan. These offer different experiences and opportunities for campus users.



-  Central Quad
-  Informal Gathering & Play Area
-  Pedestrian Malls and Thoroughfares
-  Great Lawn
-  Sports Field
-  Building Sites & Frontage

CENTRAL PLAZA

Phase 1A



- SAC building comes down in 2015
- Install temporary quad space with walks until Phase 1B when full plaza design is installed
- Fire lanes are installed on south half of campus
- Introduce Pavilion on the west side of the Library plaza (see page 97 for more information)
- Interactive Art installation at the center to serve as a focal point

Phase 1B to Full Build-out



- Hardscaped central plaza to serve as central gathering place on campus
- Tower to serve as a campus vista; clock tower; beacon at night
- Stage for campus events and performances
- Large gathering space and intimate nooks for private study and seclusion

SITE FURNISHINGS

The following sections show a sample and range of site furnishings that can be used on the campus. The Price campus has seen recent (2013/2014) improvements to its site design specifically at the south side of the Library. This included the addition of new site furnishings. (See photos below).

As earlier mentioned, it is important that site furnishings be consistent throughout campus (benches, tables, chairs, trash receptacles, etc). The smallness of the campus makes it difficult to have much diversity in site furnishing without looking hodge-podge or cluttered. Tasteful differences in a piece or two at a main entrance to a building that complement the building and the campus standard may be considered.



2013/2014 improvements to south forecourt of Library. Photos also show new tables and chairs.

BENCHES, CHAIRS, TABLES

Cues from the library project suggests a more contemporary family of benches, chairs and tables. The following are possible design styles that will work well for the campus as both standard furnishing and for tasteful differences and highlights.



Chipman chairs and table by *Landscape Forms*



Scarborough bench by *Landscape Forms*



FBF bench by *Victor Stanley*



RB12 bench by *Victor Stanley*

TRASH RECEPTACLES

Trash receptacles are usually added on to site design and landscaping as an afterthought. However they are large elements in the landscape that need to be well tied to other furnishings. Most manufacturers are producing families of furnishings that include trash receptacles. Some examples of these that could work well for the campus include the following:

Existing Trash Receptacle



Existing trash receptacles on campus are outdated and do not add to the aesthetic quality being proposed in the Master Plan



Chasepark by Landscape Forms



FGP by Landscape Forms



PRS-36 receptacle by Victor Stanley



Lakeside receptacle by Landscape Forms

PAVILION

A pavilion is proposed for the campus. This structure is to provide shade and become a gathering place for campus users. It should also be complementary to the surrounding architecture of the Library and the Student Center. Potential styles and types of this pavilion are shown below for consideration:



Dixie State University, UT



Duke University, NC



Harvey Mudd College, CA



Tensioned structures



San Antonio Main Plaza, TX (tensioned fabric)

LIGHTS AND BOLLARDS



Pedestrian lighting is being updated and unified on the campus as of Fall 2015. New light fixtures introduced to the vicinity of the CIB will set a tone for future pedestrian lighting.

A comprehensive light fixture plan should be drafted to unify future light fixtures on campus. These will include street lighting, pedestrian scale lighting, bollards, sconce lighting, etc.

Older pedestrian light fixtures on campus



New light fixture in front of CIB



Potential bollard lighting: Hawthorne, Annapolis and 35: Guide bollards by *Landscape Forms*

BIKE RACKS



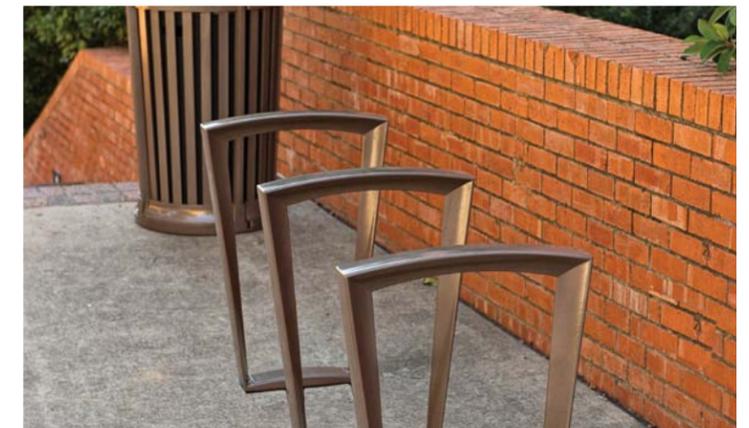
Bike racks are important landscape elements that add to the quality of site design. At the same time they serve a functional purpose by allowing cyclists to safely park and store their bikes. Existing racks on campus are dated and need to be replaced by contemporary installations for the future. Potential new installations could include:



Ride bike rack by *Landscape Forms*



BRWS-161 by *Victor Stanley*



Emerson bike rack by *Landscape Forms*

PLANTERS

Planter boxes and containers are important for softening large expanses of hardscape areas, and bring variety, color, and texture with the introduction of planting into the site design.



Sorella planter by *Landscape Forms*



Plaza planter by *Landscape Forms*

SEAT WALLS

Seat walls are proposed for the campus in the central elliptical plaza. These are concrete construction that may be clad with stone, brick or other material. They serve a great purpose as no maintenance permanent seating that add to the design quality of the site. Their form and grouping in the plaza (refer to site plan) makes them versatile for individual or group use, and also for multiple seating and relaxation positions.



Seat walls designed by CRSA, Colorado Mesa University, CO

Plant Material

TREES

Trees bring life to a place. Their strategic placement, sizing, and type also affects the look and feel of a place all year round. They are important environmental elements that have a multitude of functions: air quality improvement, climate control, aesthetics, and habitat creation. Native and adaptive species require lower maintenance and establish well. Trees can be used to delineate campus edges, serve as vistas in the landscape (ornamental trees) and provide shade and color on the campus. They can also be used to screen large expanses of surface parking.

SHRUBS

Drought-tolerant, native, and adaptive species are desired for the climate in Price. Perennials and grasses with seasonal color and texture should be used in massing to create interest and focal points on walkways, entrances, etc. Ornamental shrubs are used to enhance outdoor spaces, especially at the pedestrian level. Whether flowering or not their color, size, shape, texture, and smell are important characteristics to consider for their placement. Shrubs planted in a naturalistic way reflect the native landscape aesthetic prior to development. This can be celebrated in the landscape design.

GROUNDCOVER

Groundcover ranges from turf grasses through small shrubs to organic and inorganic mulches. These fill in the gaps in planted areas between trees and shrubs. Groundcover is important for keeping the underlying soils healthy by balancing soil temperature and moisture. They can be used to facilitate ground surface drainage and infiltration for appropriate ground water recharge. Native grasses, wildflowers, and organic mulch are encouraged. Native stone and other pervious material can also be used to slow and infiltrate runoff.

Xeriscape zones should be comprised of groupings of low maintenance, drought-tolerant plants arranged in plant communities intermittent with rocks, stones, and cobble mulch from local parent material.

ROCKS AND BOULDERS

Large stones and rocks from local parent material should be used in groupings and accentuated with natural planting of grasses and perennials. These create variety in the landscape and add color as well.



6. sustainability

SUSTAINABILITY

USU COMMITMENT TO SUSTAINABILITY

In early 2007, USU President Stan Albrecht signed the American College and University Presidents Climate Commitment, as part of a nationwide movement to reduce global warming by achieving climate neutrality. USU was the first institution of higher education in the state of Utah to sign on to the commitment. The USU Sustainability Council was convened immediately following the signing of the commitment, and was charged with developing strategies to achieve the goals and benchmarks set forth by the Climate Commitment, administered by the Association for the Advancement of Sustainability in Higher Education (AASHE). Since the signing, the university has developed a Sustainability Policy (Policy #106 of the USU Policies Manual). It reads:

Utah State University (USU) is one of the nation's premier, student-centered, land grant, and space-grant universities. The University is committed to enhancing the quality of life for individuals and communities by promoting sustainability in its operations and academic and service missions.

USU will develop appropriate systems for managing environmental, social, and economic sustainability programs with specific goals and objectives. This policy supports the goal of the USU statewide system to prepare students, faculty, and staff to proactively contribute to a high quality of life for present and future generations.

Additionally, USU established a benchmark document to establish its carbon footprint, and is tracking changes annually. The USU Climate Action Plan document outlines key areas of focus and strategies to achieve carbon neutrality by 2050.

Because the USU Climate Action Plan ambitiously aims for climate neutrality by 2050, USU will need to take big steps towards this goal. Commuting and energy usage by buildings are by far the biggest contributors to the university's carbon footprint. Energy efficiency, alternative energy, and alternative transportation strategies will be the major areas of focus in achieving climate neutrality. Culture and educational programs will also play a major role in behavioral shifts.

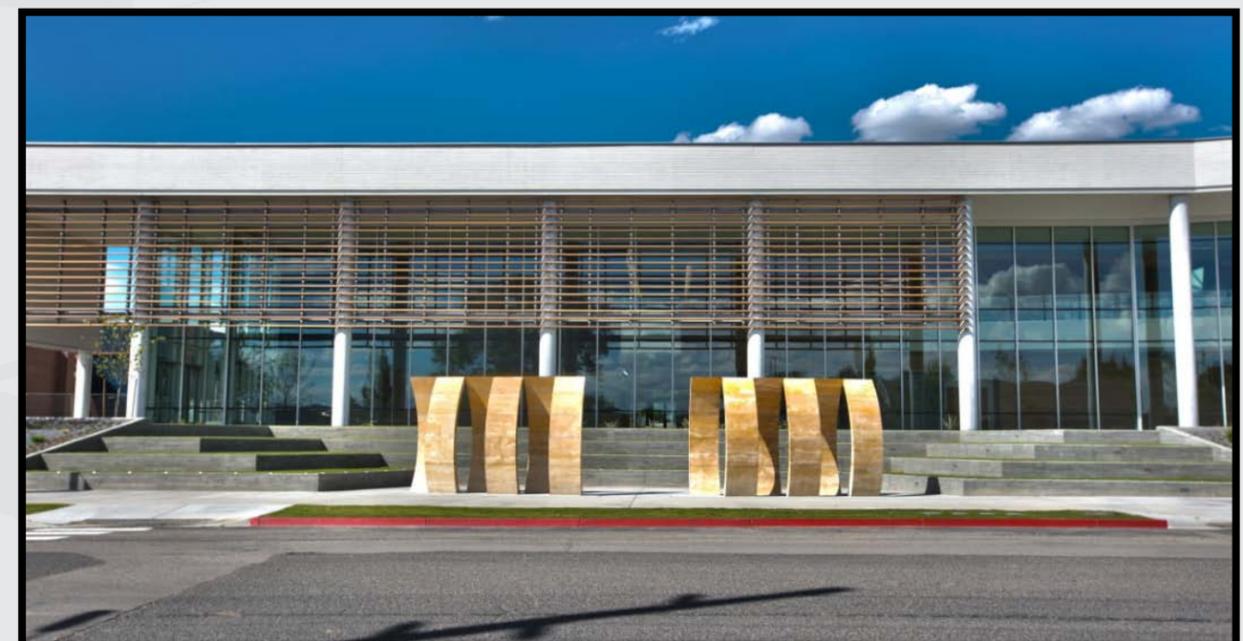
STATE OF UTAH COMMITMENT TO GREEN BUILDINGS

The State of Utah design requirements states that all new buildings must meet sustainable design standard, known as the High Performance Building

System. The guideline, implemented in March 2015, is diverse and includes requirements for site development as they relate to building design and construction. As the development of complete campuses are not the purview of the HPBS, it does require the following:

- A focus on pedestrian and bike access and circulation through the site
- An emphasis on limiting single rider vehicle impacts and increased focus on public transportation usage through the reduction of parking stalls
- A desire for reduced maintenance and reduced water consumptive native and adaptive landscapes
- Implementation of Best Management Practices for Storm Water
- Reduction of heat island effect and light pollution

These guidelines seek to incorporate recommendations from ongoing campus initiatives championed by "Blue Goes Green", the USU 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). USU has met or exceeded this standard previously. USU continues to require LEED Silver certification or higher for all new buildings. In the past several years, USU has constructed two (2) LEED Platinum certified building, three (3) LEED Gold certified buildings (+2 pending), and two (2) LEED Silver building (+2 pending) and one (1) Sustainable Site Initiative Project.



The Central Instructional Building on the USU Eastern Campus will seek LEED Silver certification

SUSTAINABILITY FOR THE USU EASTERN CAMPUS

The USU Eastern Campus in Price has a unique opportunity to become an example for USU in sustainable campus design. As the campus is shaped, planning for sustainability should be emphasized from the start. Sustainable design may be accomplished on many levels, from neighborhood development, site design, transportation planning, and building design. Objectives for sustainability should be set early in the design process, and a system for developing measurable, high performance projects should be implemented and followed.

The design, transportation, and engineering recommendations for this Master Plan made mention of sustainable practices that can help the Institution achieve its goals.



LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)

One of the better known green building rating systems, Leadership in Energy and Environmental Design or LEED is an independent, third party verification that a building or community was designed and built using strategies aimed at achieving high performance in the following categories:



- Sustainable Sites
- Water Efficiency
- Energy Efficiency
- Materials Selection
- Indoor Environmental Quality
- Innovation & Design
- Regional Priority

Each project must achieve a set of prerequisites and will be awarded up to 100 possible points which will result in varying levels certification beginning with "Certified", graduating to "Silver", "Gold" and "Platinum" certification. As mentioned above, the State of Utah requires Silver certification for all new state buildings and Utah State University has commonly surpassed this goal.

With various potential rating system tracks within the LEED family, LEED for New Construction (LEED-NC) will likely be most commonly used for new buildings on the USU Eastern Campus. However LEED for Neighborhood Development (LEED-ND), addressing larger scale community planning and growth, would be a beneficial guide for the campus development. Incorporating a specialized set of prerequisites and up to 110 potential points, LEED-ND rates high performance in the following categories:

- Smart Location & Linkage
- Neighborhood Pattern & Design
- Green Infrastructure & Buildings
- Innovation & Design
- Regional Priority

LOCATION AND RESOURCES

The location of the campuses, within Price, sets it up for economic stability and increased walkability/bikeability by its placement near retail and within walking distance of downtown. The county and cities have shown their support, both financial and by way of endorsement of the project, giving it a commitment for

success. Development of each campus site provides new life to the area and economic stimulus in the future. While the Price campus has its own challenges and advantages for sustainability, it is part of a large network of Utah State University campuses. Decisions and goals for this location should be made to maximize the location while taking into consideration the larger overarching goals of USU. Among others, USU's initiatives in transportation, carbon offsets, site and process water reduction, and recycling. Specific strategies to review for the USU Eastern Campus location include ground source heat and solar opportunities.

SUSTAINABLE SITE INITIATIVE (SITES)

THE SUSTAINABLE SITES INITIATIVE™



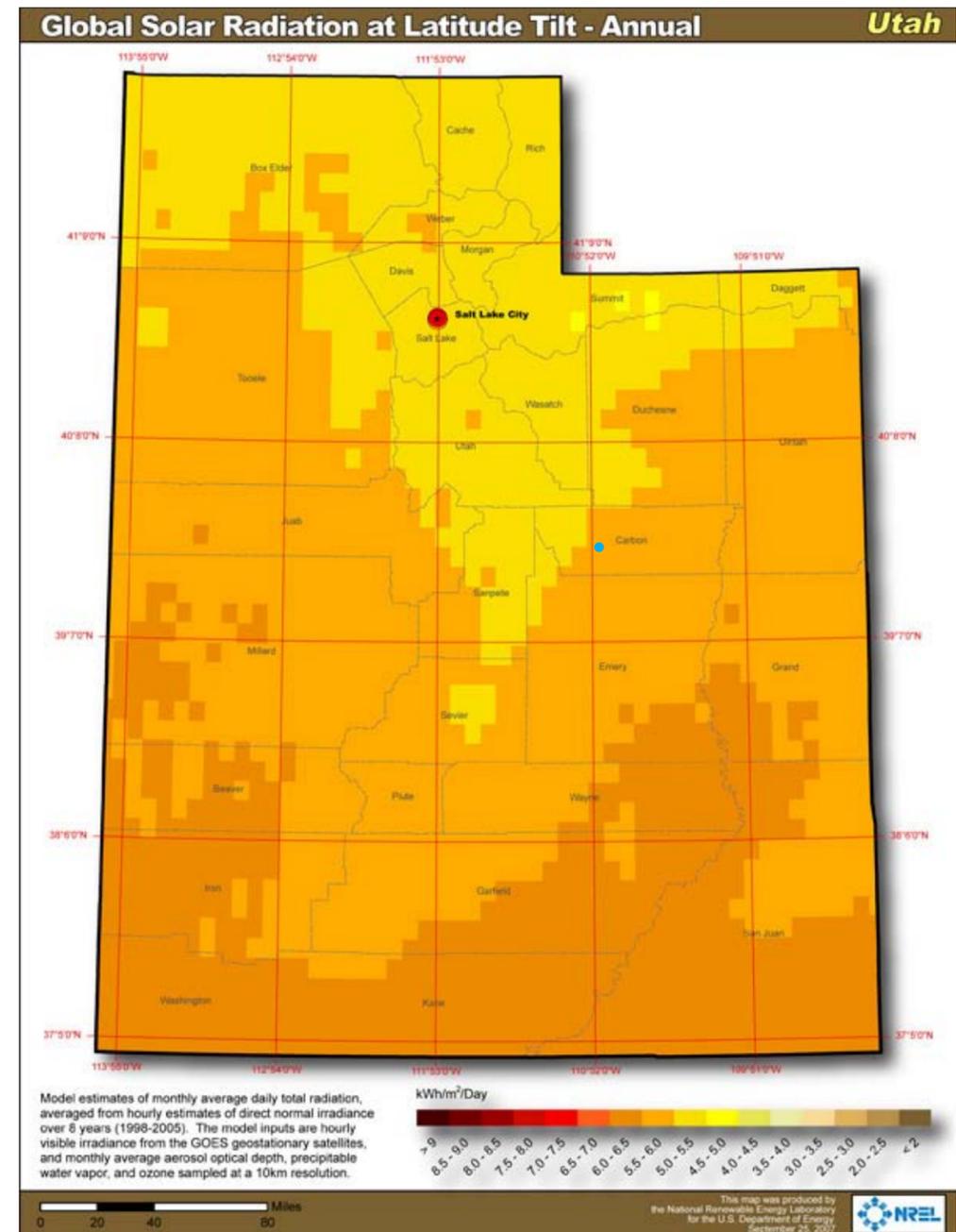
A relatively new rating system has been developed by the American Society of Landscape Architects with the Lady Bird Johnson Wildflower Center and the United States Botanic Garden called the Sustainable Sites Initiative (SITES). This program promotes sustainable land development and management practices that can apply to sites with and without buildings. Using this guideline would offer a holistic approach of viewing the new campus and its design to fit within your sustainable culture. This rating system includes a system of prerequisites and points awarded for high performance in the following categories:

- Site Selection
- Pre-Design Assessment & Planning
- Water
- Soil & Vegetation
- Materials Selection
- Human Health & Well-Being
- Construction
- Operations & Maintenance
- Monitoring & Innovation



USU Swaner EcoCenter is Utah's first Sustainable Site certified project

Achievement in these categories results in points rendering final ratings between one (1) and four (4) stars. Whether USU decides to pursue this certification or not, the guidelines within this rating system provide an organized approach and standards for sustainable site development.



SOLAR

Using photovoltaic solar resource maps from the National Renewable Laboratory, the state of Utah is estimated to produce between 5.3-6.3 kWh/m²/day or 5.3-6.3 kilowatt hours per square meter per day. This refers to the effective amount of power able to be harnessed through photovoltaic panels per day, providing power sufficient for panel installation to contribute to the campus building or site electrical use. In this same theme, solar hot water panels can use this same viable solar resource to provide low cost hot water for campus buildings. This is especially cost effective on dorms or recreational buildings which have higher hot water needs.

Significant site development will occur over the lifespan of these campus sites. Work will include modification to previously developed sites on both campuses, the development of sites for new construction, as well as renovation and replacement of existing structures. As such, the following measures will respond to the opportunities for both new construction and with existing facilities and landscapes. A summary of potential sustainability opportunities and guidelines relevant for both campus sites are listed in the four following categories: Site Amenities, Water Conservation & Water Management, Building Systems, and Land Use.



Well designed outdoor seating areas take into consideration season exposure, landscape diversity, and creation of active and passive activity areas.



Bike racks support alternative transportation.

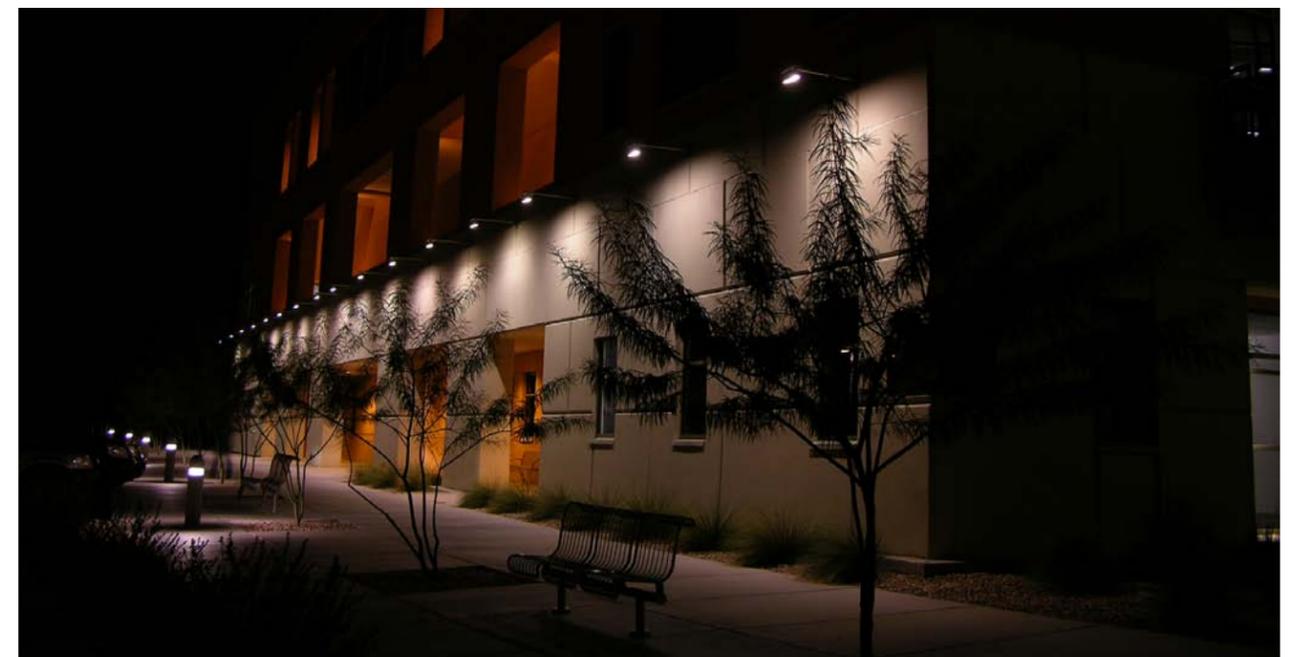


Trash and recycling containers in use.

SITE AMENITIES

Creating a holistic sustainable campus is the goal of the site amenities section 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 ways that site sustainability can be improved on each campus site.

- Supporting bike use through planned pathways, as well as dedicated and secure parking near building entrances.
- Provide outdoor trash and recycling containers/receptacles.
- Plan for landscape elements adjacent to buildings and parking areas to provide shading/limit solar exposure.
- Design walks, drives, and roofs with high albedo finish to limit heat island effects.
- Consider life-cycle costs 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 campus.
- Specify fully shielded outdoor lighting to support dark sky initiatives.



Outdoor lighting design respects dark sky initiatives while adding to campus safety.

WATER CONSERVATION & MANAGEMENT

Set in the 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 use can be managed and conserved.

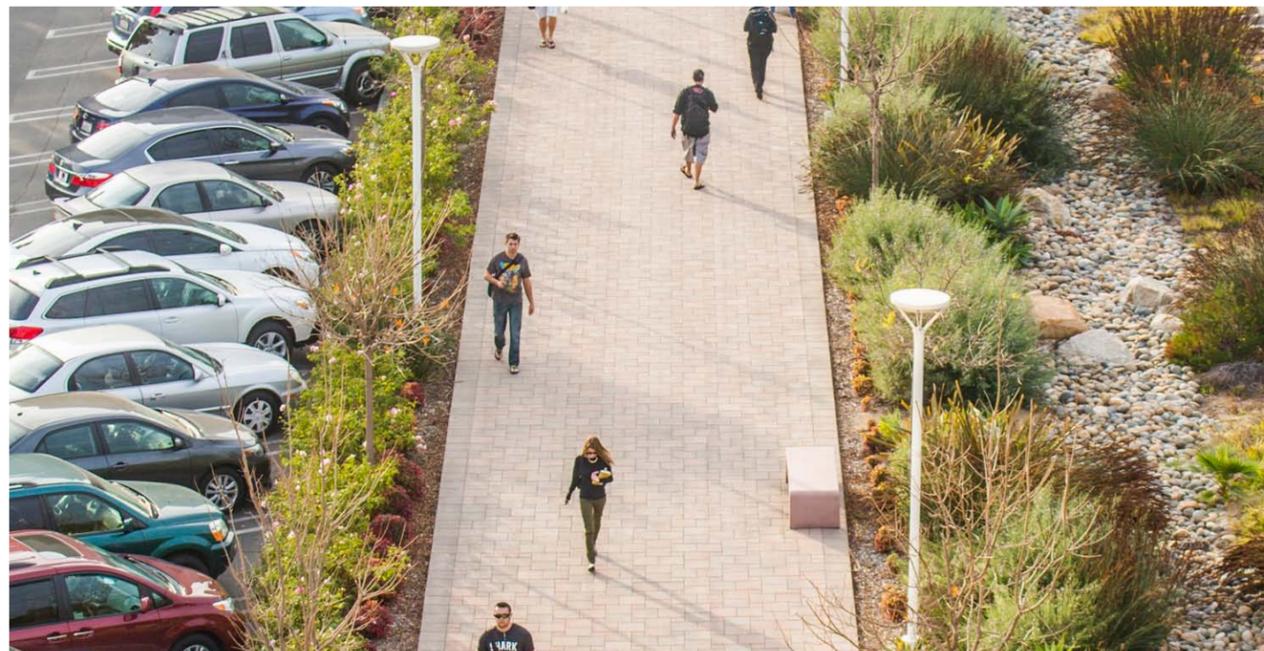
- Reduce potable water use for irrigation. Utilize irrigation management systems which adjust irrigation for the weather.
- Rainwater reuse, through the use of bioswales, visible stormwater runnels and site design to accommodate seasonal snow storage.
- Manage stormwater on-site in coordination with local and state regulations.
- Selective use of turf grass and minimized areas dedicated to activity areas.
- Use of permeable paving to allow from stormwater and snow melt percolation.
- Green roofs to capture rainwater, extend roof life, increase thermal performance where feasible.
- Protect and restore natural hydrologic functions through the design of natural areas, use of native/adaptive planting and protection of on site water features.



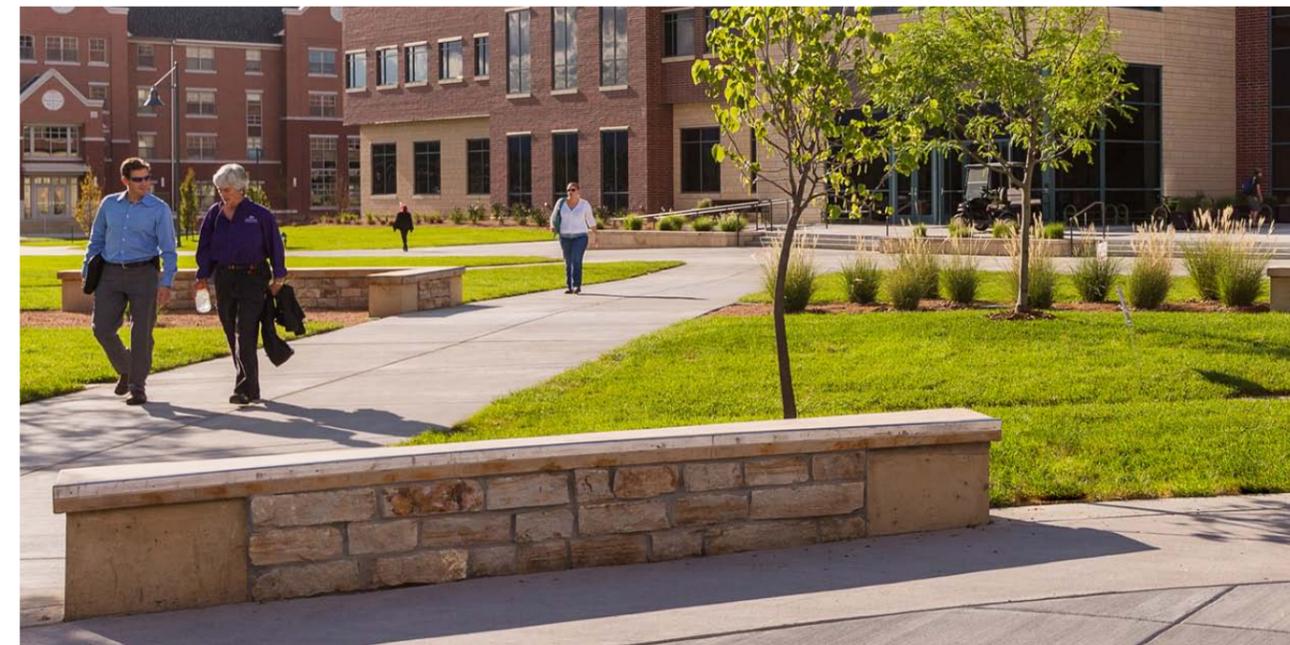
Signage illustrates "Blue Goes Green" initiatives.



Water conserving landscape



This pedestrian mall design includes walking paths, bioswales, and dense adaptive planting.



More intensive landscapes at the heart of campus will support campus welcome events.



Building integrated photovoltaics at the Agricultural Science Building at USU.

BUILDINGS AND 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 existing and future facilities can assist in achieving this important goal.

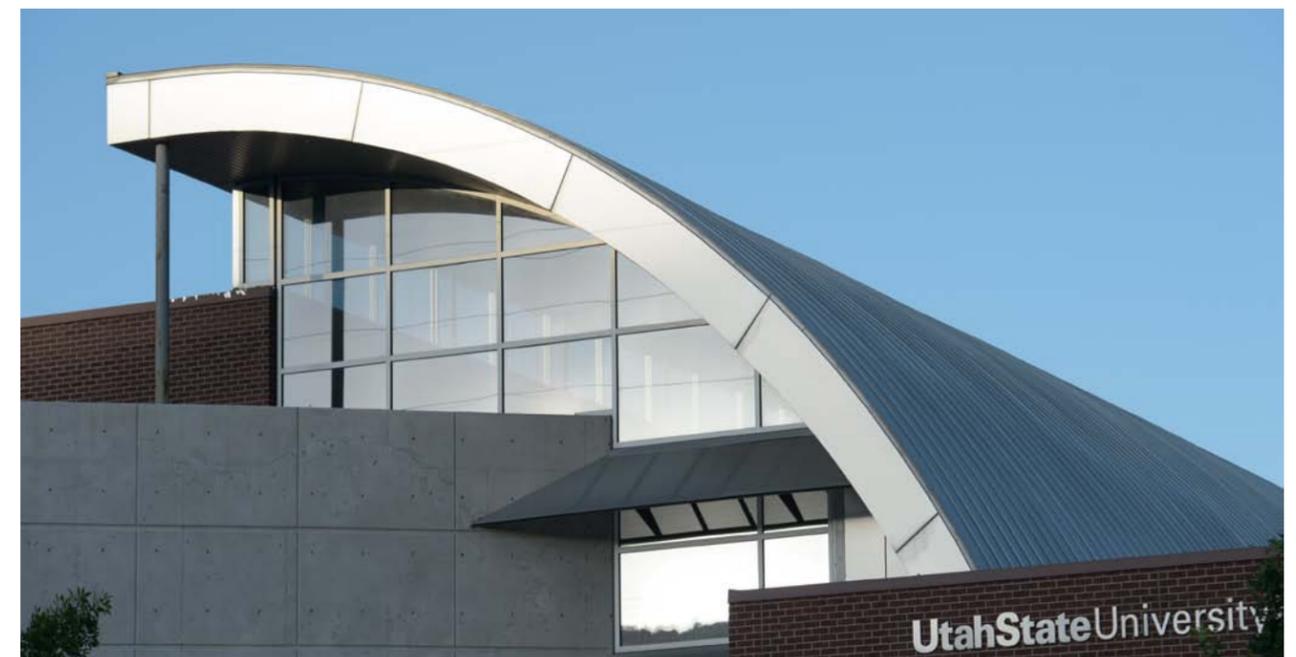
- Use photovoltaic and wind turbines to produce alternative energy, in ways that are not obtrusive to the overall campus character of each site.
- Configure building massing for passive ventilation and solar gain as feasible.
- Consider building footprint and materials for daylighting and thermal lag opportunities in new construction.
- Consider renewable energy opportunities for existing and new construction.
- Use occupancy sensors and automatic lighting controls where appropriate.
- Design and construct new facilities to meet LEED Silver or higher certification standards and DFCM High Performance Standards.
- Implement 2012 Campus Energy Conservation Plan measures addressing the climate accord to reduce energy use intensity (EUI), lower plug and phantom loads.
- Retro-commissioning of existing buildings to determine the needs and opportunities of existing facilities.



Passive strategies can be incorporated.



Material selection to plan for thermal lag.



Retro-commissioning of existing facilities, such as the Student Center, could increase efficiency.

LAND USE

The USU Eastern Campus is unique. Price's 38-acre central campus site is sited near the urban core with neighboring retail, commercial and civic uses within walking distance of campus. While opportunities for expansion on campus is readily available, the efficient use of the remaining land with potential future buildings of other forms of programmed development must be carefully managed. The following guidelines seek to maximize the land use efficiency for existing and future facilities, and landscape and site development space needs.

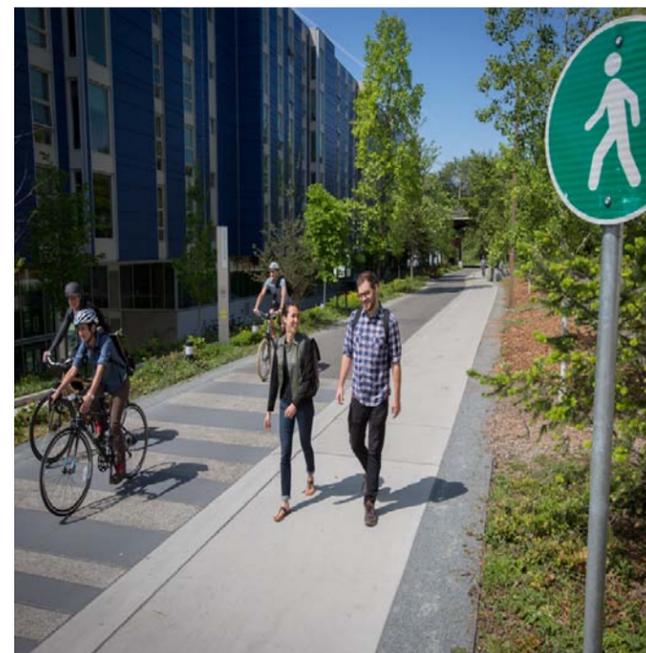
- Protect open space for community creation and support activities (such as concerts, events and markets), recreation and other activities which draw the university community out of buildings and onto the site and the neighboring community through the campus.
- Enhance streetscape landscapes and hardscapes to create identifiable site elements, signage, and support walkable environments.
- Increase the density of buildings supporting the creation of identifiable campus environments supported by buildings, site amenities and landscape elements.
- Preserve viewsheds to and through each campus to enhance engagement and support regional identification.
- Further incorporate transit and alternative modes of transportation on campus.
- Identify transportation management goals to help reduce single rider vehicle impacts. Incentivize transit and bike use, carpool and low-emitting vehicle use.



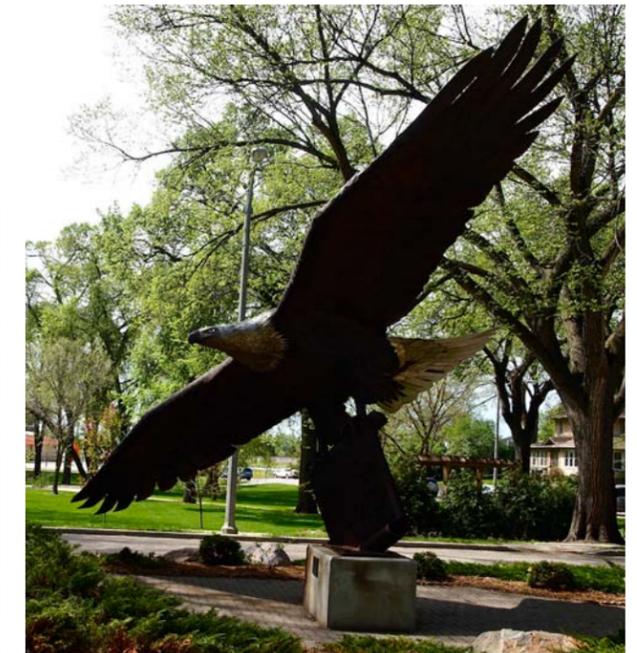
Enhance the walkable quality of the campus, including increasing access to walking paths, localized landscaped environments, site lighting, site amenities, and access to and through the site.



Enhance the functional qualities of each campus, incorporating active use areas close to buildings.



Incorporate regional trail system with site design.



Create identifiable campus environments.

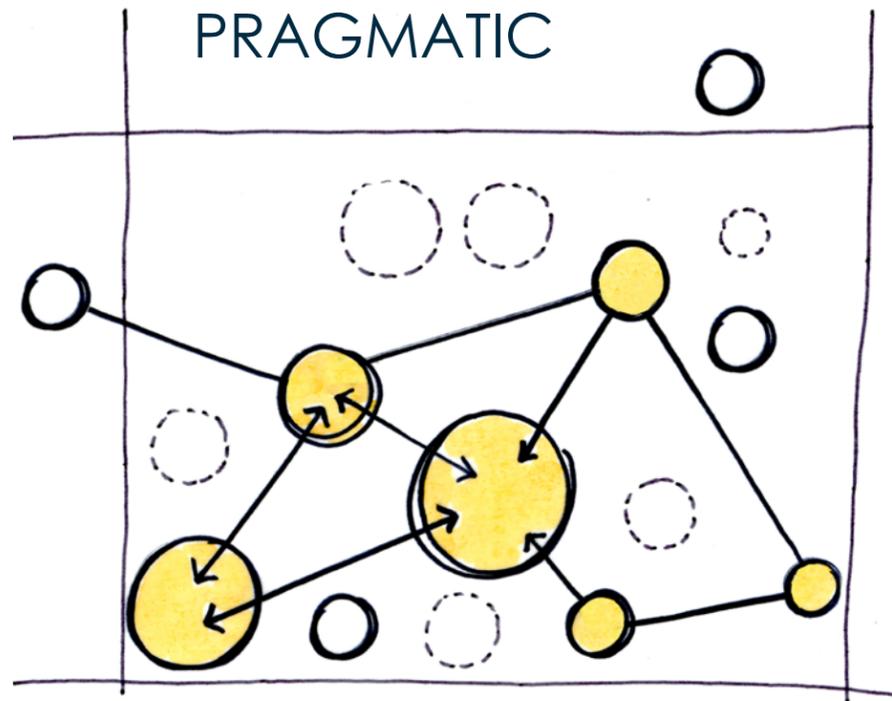


CONTENTS

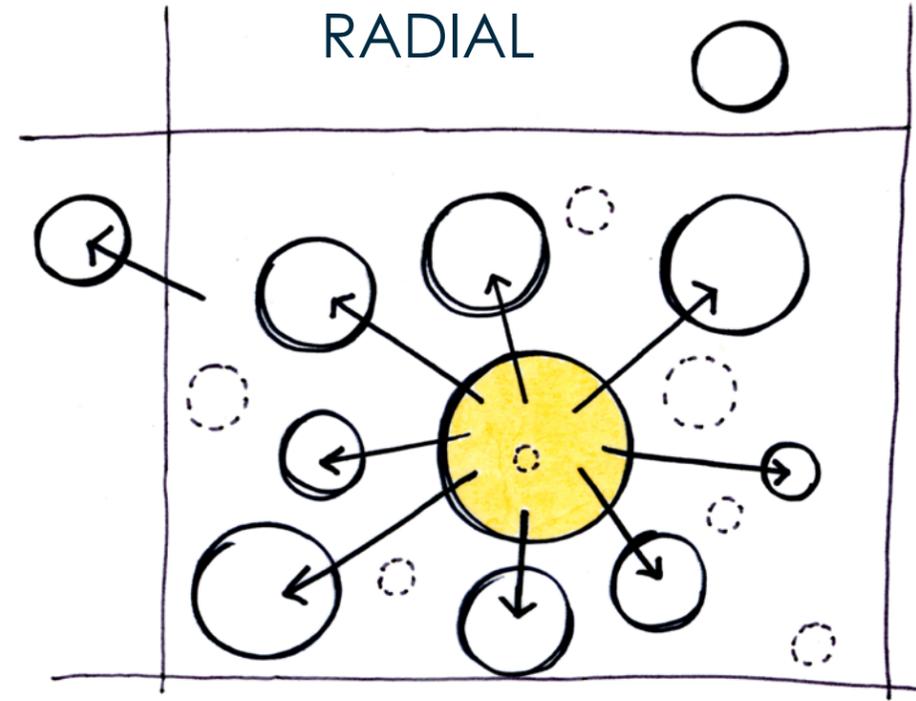
APPENDIX A (Concept Plans & Drawings)	110
APPENDIX B (Engineering Data)	116
APPENDIX C (Irrigation Study)	136
APPENDIX D (Survey Results)	144
APPENDIX E (Facilities Ctrl. Heating & Cooling Distribution)	148

appendix A

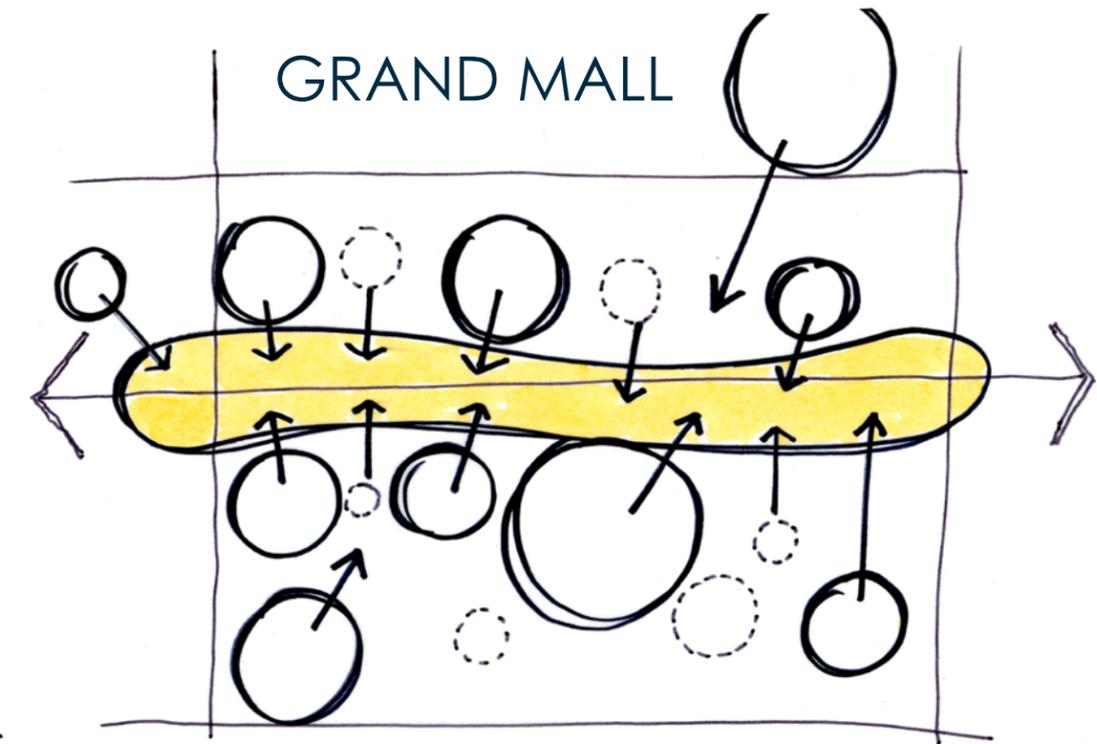
PRELIMINARY LAYOUT CONCEPTS



- Build on existing campus structure
- Hierarchical system of open spaces
- Maintain chiller location
- Renovate existing buildings
- Introduce new administration building
- New clock tower
- Strengthen gateways
- No fringe property acquired



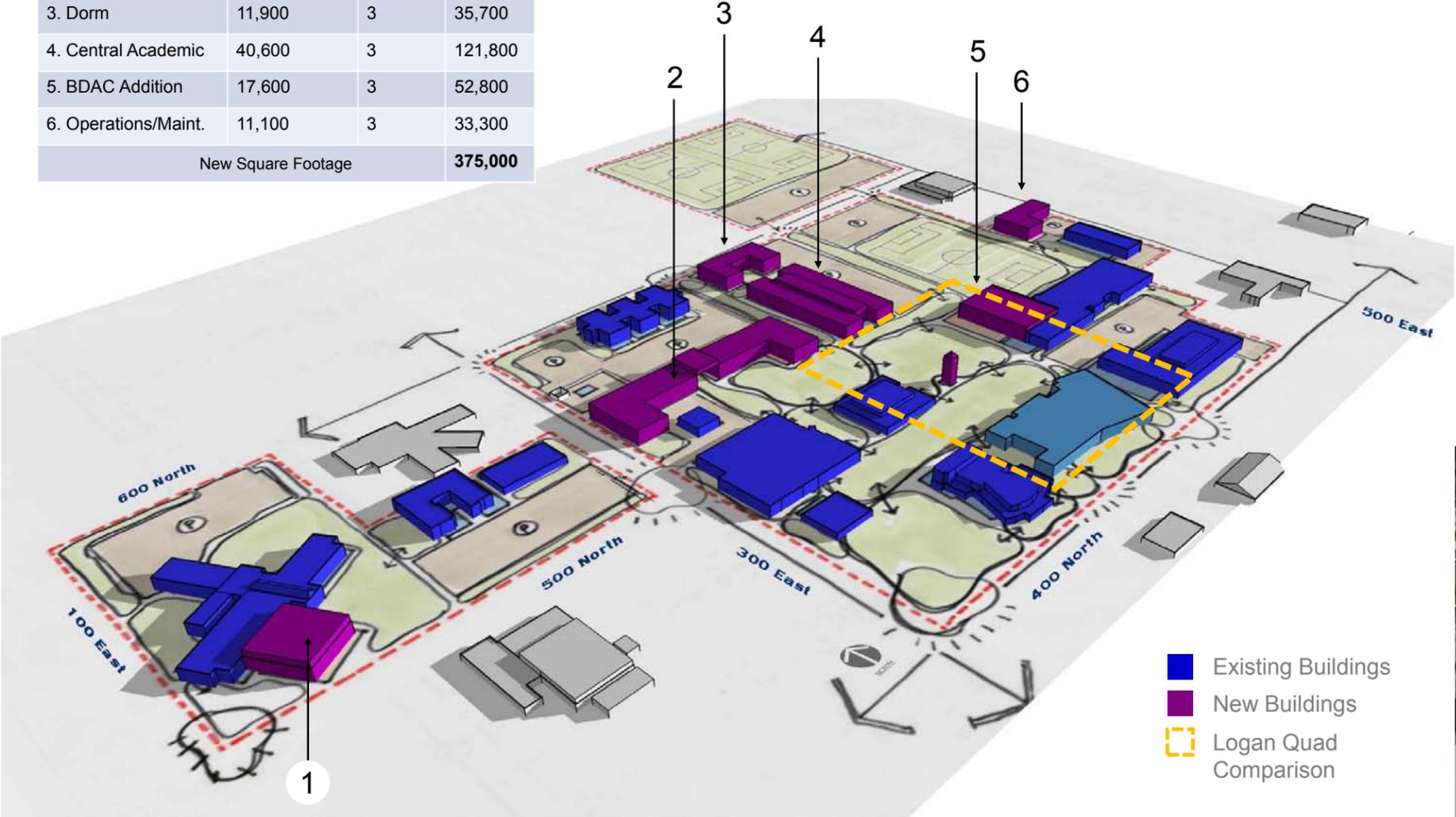
- New bold radial form
- Open space radiates from central quad
- Several buildings replaced/added
- Clock tower as focal point
- Chiller moved and consolidated with maintenance/operations
- Introduce new administration complex
- Strengthen gateways
- Care Center property acquired
- Parking garage introduced



- Central Mall “gathers” all campus activity
- Soccer field removed
- Several buildings replaced/added
- Chiller moved and consolidated with maintenance/operations
- Introduce new administration complex
- Strengthen gateways
- Care Center property acquired
- Parking garage introduced

Concept 1: Pragmatic

New Building	Footprint	Floors	Total
1. Business Addition	10,000	3	30,000
2. Admin Complex	33,800	3	101,400
3. Dorm	11,900	3	35,700
4. Central Academic	40,600	3	121,800
5. BDAC Addition	17,600	3	52,800
6. Operations/Maint.	11,100	3	33,300
New Square Footage			375,000

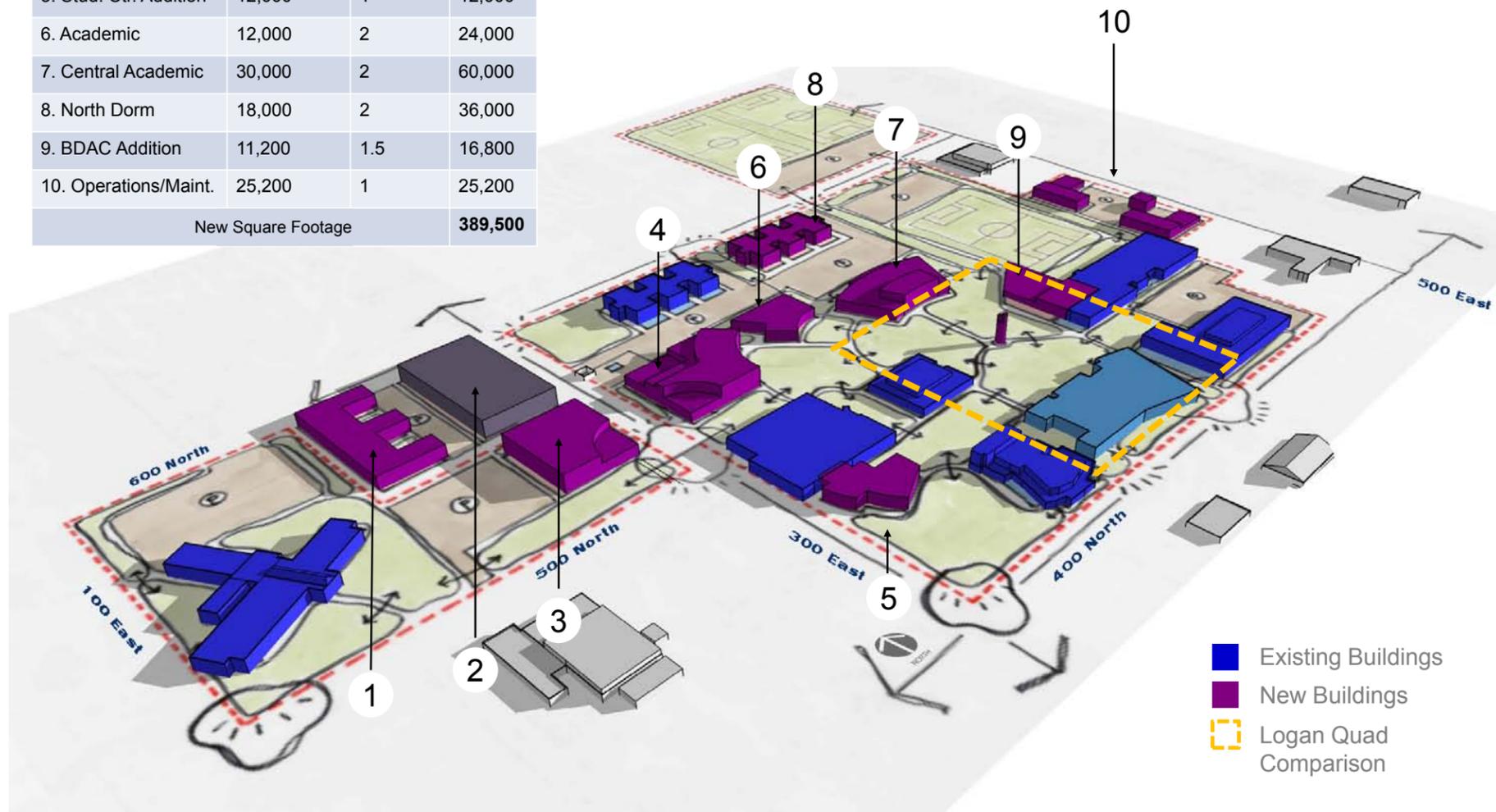


Concept 1: Pragmatic



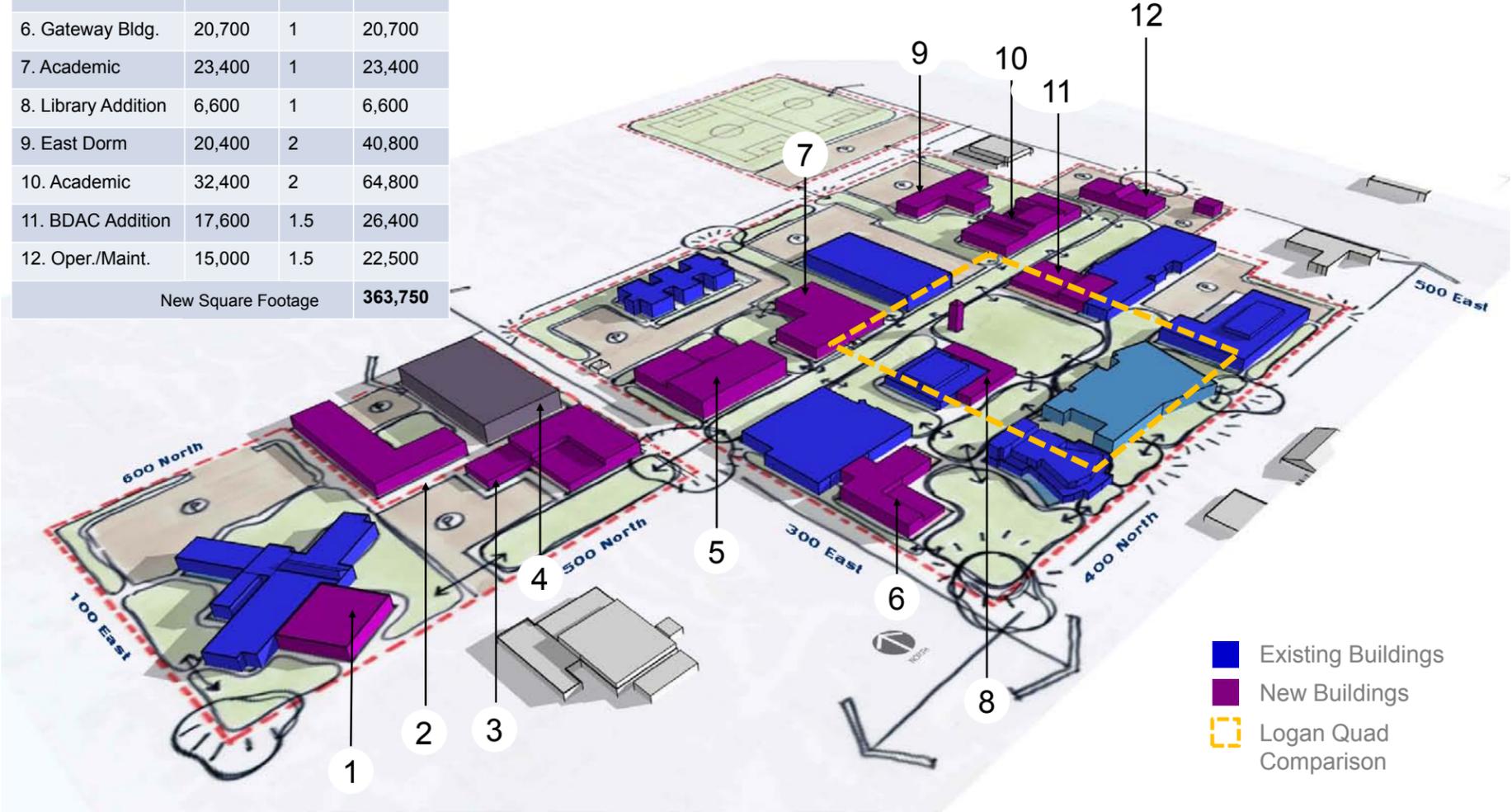
New Building	Footprint	Floors	Total
1. West Dorm	26,500	2	53,000
2. Parking Structure	30,000	3	
3. Academic	45,000	2	90,500
4. Administration	36,000	2	72,000
5. Stud. Ctr. Addition	12,000	1	12,000
6. Academic	12,000	2	24,000
7. Central Academic	30,000	2	60,000
8. North Dorm	18,000	2	36,000
9. BDAC Addition	11,200	1.5	16,800
10. Operations/Maint.	25,200	1	25,200
New Square Footage			389,500

Concept 2: Radial



Concept 3: Grand Mall

New Building	Footpt	Flrs	Total
1. Bus. Addition	10,000	2	20,000
2. West Dorm	22,400	2	44,800
3. Academic	26,500	1.5	39,750
4. Parking Garage	39,000	3	
5. Administration	36,000	1.5	54,000
6. Gateway Bldg.	20,700	1	20,700
7. Academic	23,400	1	23,400
8. Library Addition	6,600	1	6,600
9. East Dorm	20,400	2	40,800
10. Academic	32,400	2	64,800
11. BDAC Addition	17,600	1.5	26,400
12. Oper./Maint.	15,000	1.5	22,500
New Square Footage			363,750



- Existing Buildings
- New Buildings
- Logan Quad Comparison



OPEN HOUSE BOARDS FEBRUARY 5, 2015

CRSA
UtahStateUniversity
EASTERN

1. overview



is developing a new Master Plan for the 38 acre USU Eastern Campus in Price. The campus serves the southeastern portion of the state, with approximately 1,100 students (FTE) and 52 degree programs. This Open House will be an opportunity for you to take a look at some of the ideas and concepts that are being proposed, and for you to contribute to the master planning process.

Why Master Plan?

A master plan establishes a framework for coordinating future development and physical change. This framework defines patterns and characteristics that maintain the campus' unique qualities, while identifying strategic opportunities for growth. The physical environment has a tremendous influence on the excellence of education, quality of life, and the image of a college. Thus a master plan serves as a guide for shaping and reinforcing a campus' unique attributes, institutional culture and academic mission.



Site



The main campus is located close to the core of Price City and surrounded generally by development - mainly residential and institutional uses.

The primary focus of the Master Plan will be on the main campus

A 6.92 acre parcel, known as the Bob Henry Property, is located about a 1/2 mile to the east of the main campus, and is available to USU Eastern as campus property.

Public Open House

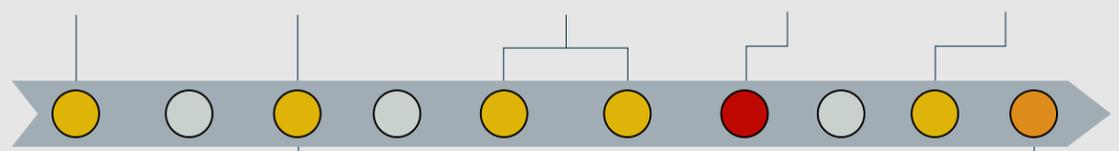
PRICE CAMPUS MASTER PLAN

CRSA
UtahStateUniversity
EASTERN

2. timeline

We are Here!

PROJECT KICKOFF	FOCUS GROUP & VISIONING WORKSHOPS	EXECUTIVE COMMITTEE WORK SESSIONS	PUBLIC OPEN HOUSE	CONCEPT DEVT. & MASTER PLAN REFINEMENT
Nov 5, 2014	Nov 18 & 19, 2014	Dec 2014 - Jan 2015	Feb 5, 2015	Feb - May 2015



Ongoing Executive Committee Coordination & Concept Development



Focus Group & Visioning Workshops



Executive Committee Work Sessions



Public Open House

May 2015

FINAL DELIVERABLES



Public Open House

PRICE CAMPUS MASTER PLAN

CRSA
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EASTERN

3. vision + values

Planning Areas

- CAMPUS GROWTH CAPACITY
- PHASING
- PROGRAMS & SERVICES
- CAMPUS CHARACTER & IMAGE
- FACILITIES & UTILITIES
- OPERATIONS & MAINTENANCE

Planning Priority

- CAMPUS EDGE & IDENTITY
- Iconic Landmarks
- Campus Brand | Identity
- ACTIVITY & RELAXATION
- Quads | Courtyards | Plazas
- Places for People
- Fields & Rec Areas
- PEDESTRIAN EXPERIENCE
- Campus Core Strategy
- Multimodal Travel

4 images representing the key values of the Plan



- SERVICE
- HISTORY
- CONNECTIVITY
- PARTS OF A WHOLE
- STRENGTH
- COLLABORATION
- COMMUNITY CONNECTION



- ROOTS
- STRENGTH
- HISTORY
- ADVERSITY



- ADVERSITY
- HISTORY
- STRENGTH
- TRANSFORMATION



- VISION
- ASPIRATION
- DEDICATION
- GOAL SETTING

- GROWTH
- NURTURE
- POSSIBILITY
- FUTURE

- ACHIEVEMENT
- ADVENTURE
- PERSPECTIVE

Public Open House

PRICE CAMPUS MASTER PLAN

114

4. planning drivers

Quick Facts

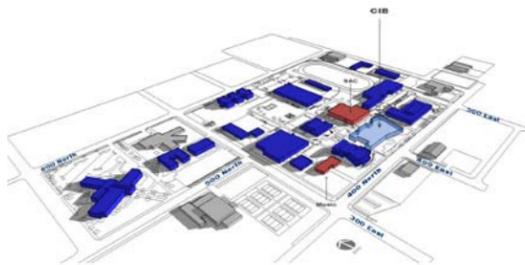
- The entire campus lies within a 1/4 mile walking radius, which is a 5 minute walk
- The planning window is for a full buildout in 50 years
- Some facilities, amenities, and programs may have to move to other outlying properties in the City that are owned by USU
- It is assumed that the University may acquire the Parkdale Care center property in the future
- The new CIB should be able to help meet the space needs of the campus for the next four (4)+ years



[2] The Student Activity Center (SAC) and the [3] Music Building are slated to be demolished in 2015. This will create more opportunities for open space development within the campus



[1] The Central Instruction Building (CIB) will be completed in 2015. This new building will create a strong presence and gateway for the campus on 400 N. The future planning of the campus will take cues from the 'language' this new building brings.



Public Open House

PRICE CAMPUS MASTER PLAN

<https://www.surveymonkey.com/s/XL8R23C>



Scan the QR code or go to the link below and let us know what you think

5. phasing plans

Phase 1

10 - 15 yrs

Campus plans develop and are achieved incrementally, and the phasing plans are a good tool to realize a logical progression that meets the space needs of the campus over time. The first phase of this campus plan envisions a strategy that achieves the following:

- Create a campus core that works with existing spaces like the 'pit' and fountain. This core will include a large gathering space with other intimate landscaped spaces anchored by a central tower.
- Add more spaces for campus users including an addition to the BDAC, expansion of the Student Center, and a new gateway building.
- Gateway improvements on all major intersections around the campus including a significant gateway feature at 300 E & 400 N.



Public Open House

PRICE CAMPUS MASTER PLAN

<https://www.surveymonkey.com/s/XL8R23C>



Scan the QR code or go to the link below and let us know what you think

6. concept plan

Phase 3

Full buildout - 50 yrs

Phase 3 represents the full build-out of the main campus. In this phase it is assumed that the site would have met its logical developable capacity and additional uses/programs /facilities may have to be moved to satellite sites owned by the University in the City. Highlights of this phase include:

- New academic building on the west part of campus
- New academic building on McDonald Career Center site
- Parking structure with soccer field on top. This could be a one level or multi level structure depending on parking needs.



Land Use

- Housing Precinct
- Academic Precinct
- Athletic/Rec Precinct
- Service & Support
- Central Open Space

Campuses are shaped by the way people use them. Daily activities by students, faculty and staff are framed by the campus layout. The above named precincts represent an organization of the campus that builds on existing conditions, while establishing land use relationships to promote an efficient and active campus.



Public Open House

PRICE CAMPUS MASTER PLAN

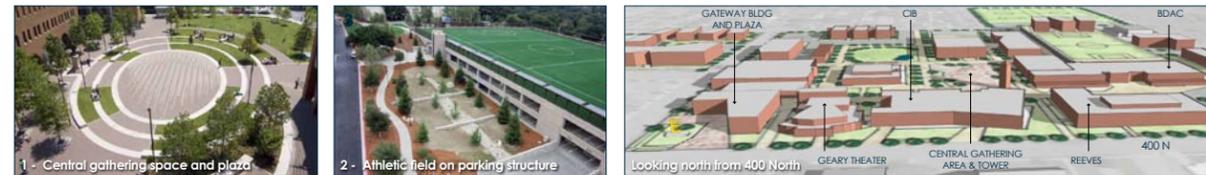
<https://www.surveymonkey.com/s/XL8R23C>



Scan the QR code or go to the link below and let us know what you think

7. concept plan

Views



Public Open House

PRICE CAMPUS MASTER PLAN

<https://www.surveymonkey.com/s/XL8R23C>

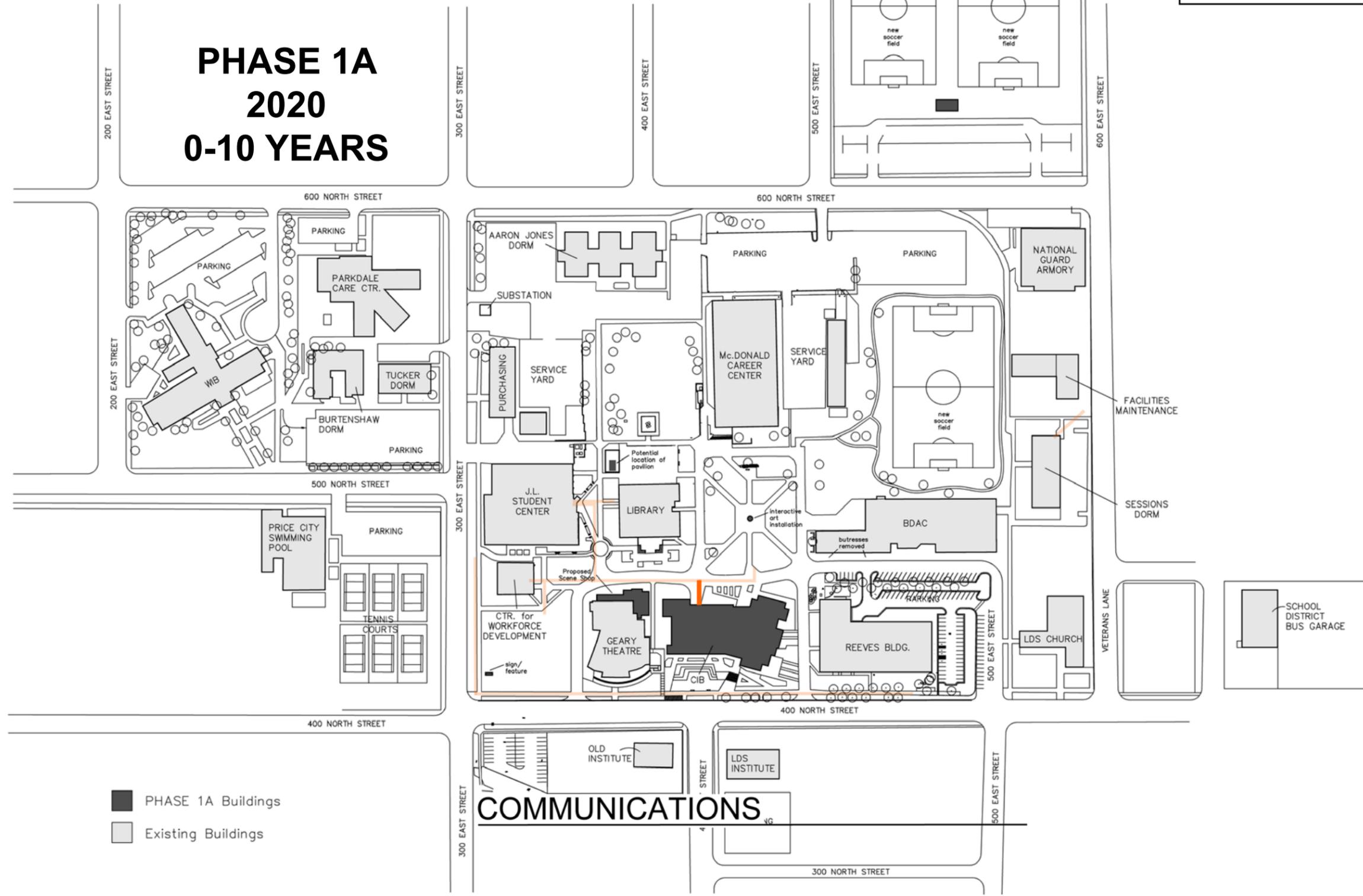


Scan the QR code or go to the link below and let us know what you think

appendix B

PHASE 1A 2020 0-10 YEARS

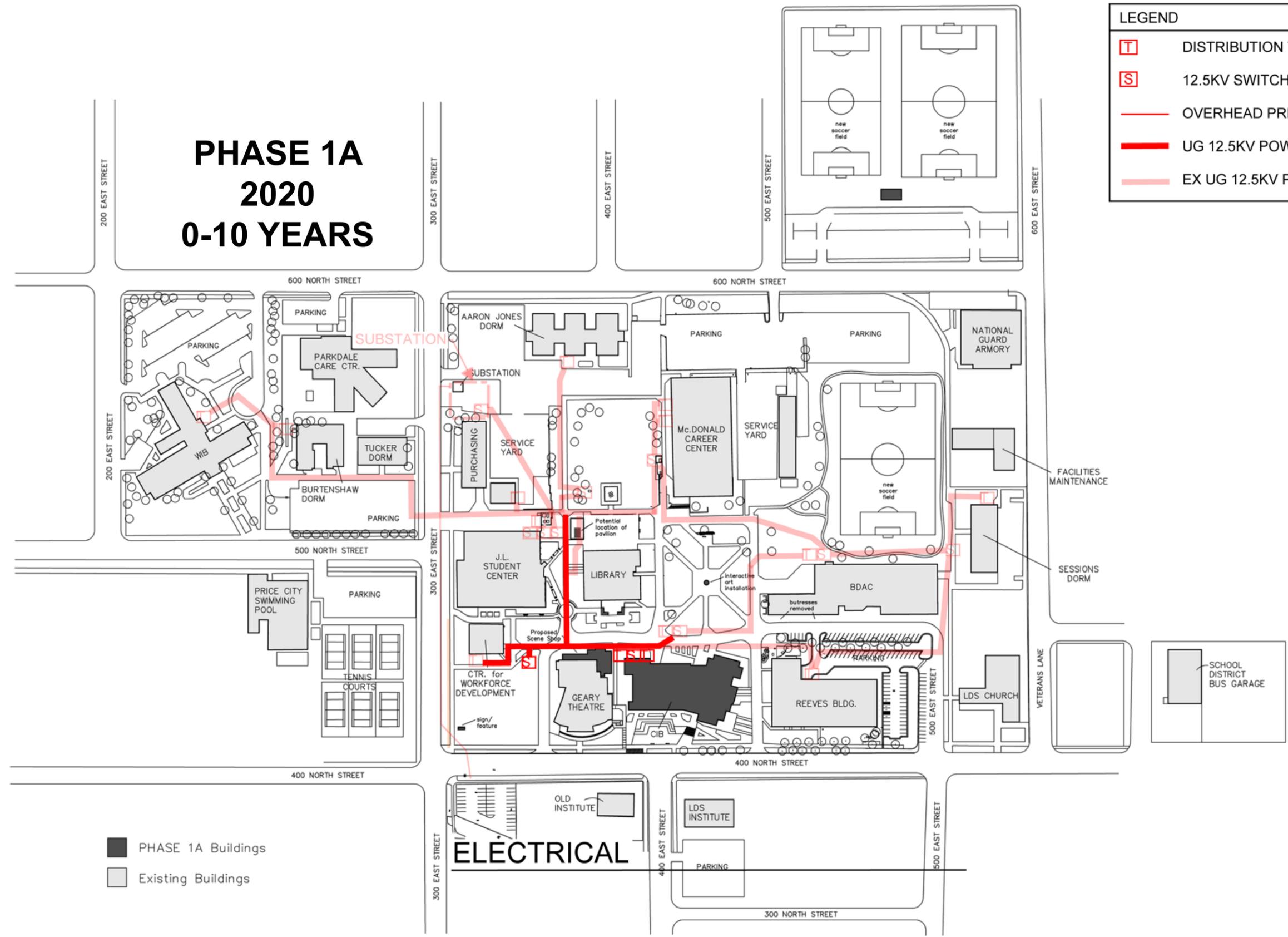
LEGEND	
	COMMUNICATIONS
	EX COMMUNICATIONS



ELECTRICAL/COMMUNICATIONS RECOMMENDATIONS

PHASE 1A 2020 0-10 YEARS

LEGEND	
	DISTRIBUTION TRANSFORMER
	12.5KV SWITCH
	OVERHEAD PRICE POWER LINES
	UG 12.5KV POWER
	EX UG 12.5KV POWER

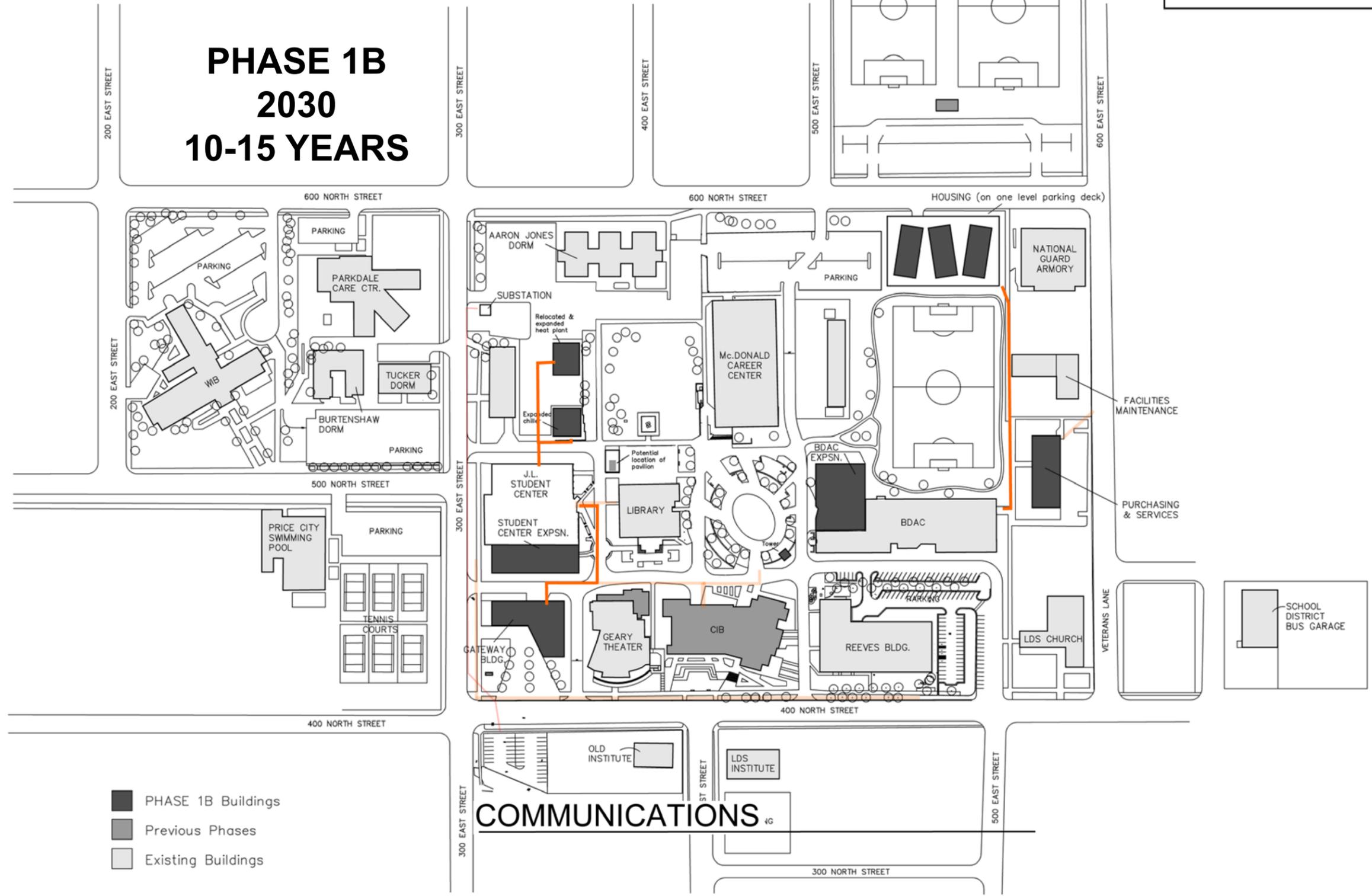


 PHASE 1A Buildings
 Existing Buildings

ELECTRICAL

PHASE 1B 2030 10-15 YEARS

LEGEND	
	COMMUNICATIONS
	EX COMMUNICATIONS

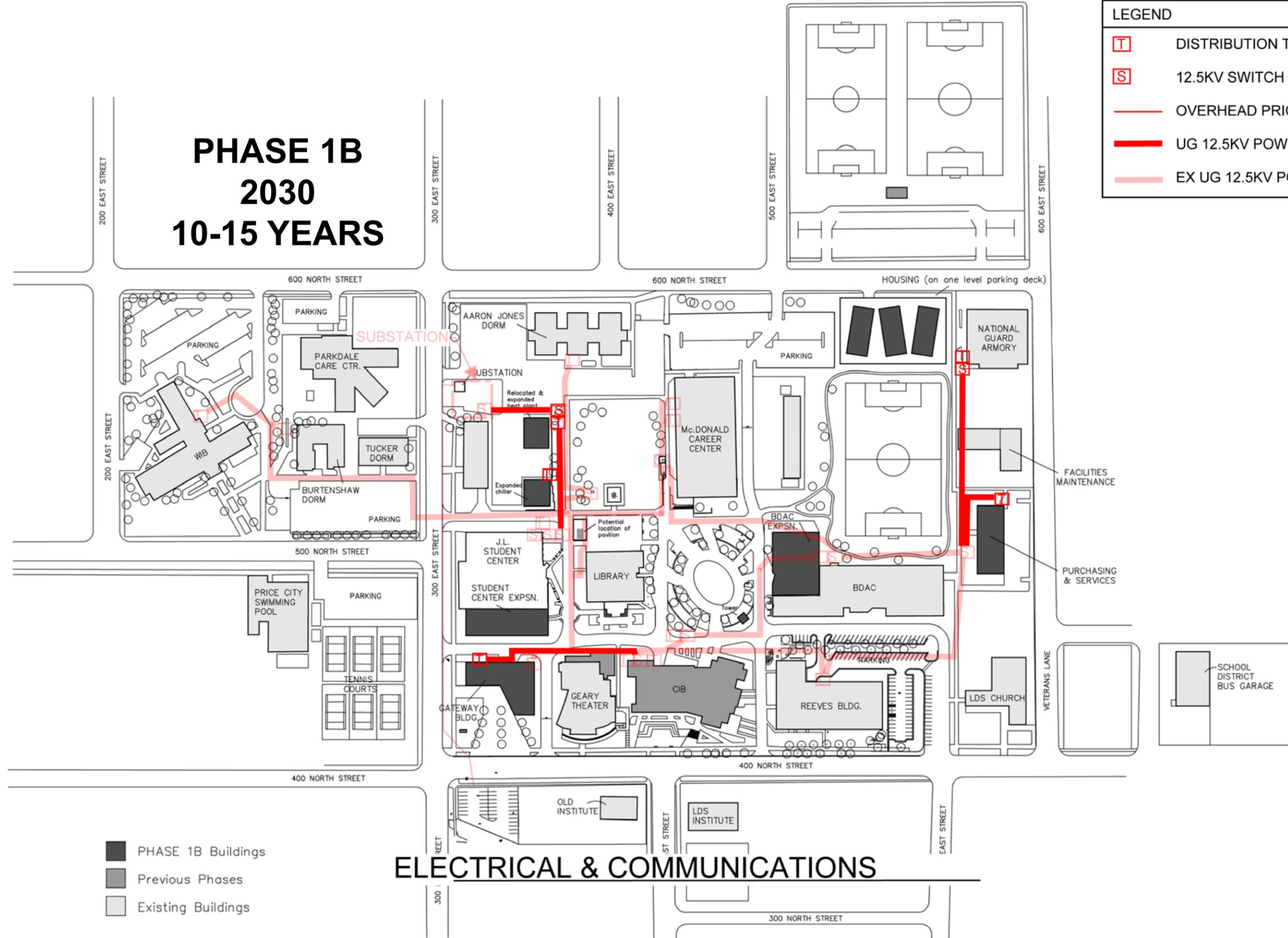


-  PHASE 1B Buildings
-  Previous Phases
-  Existing Buildings

COMMUNICATIONS

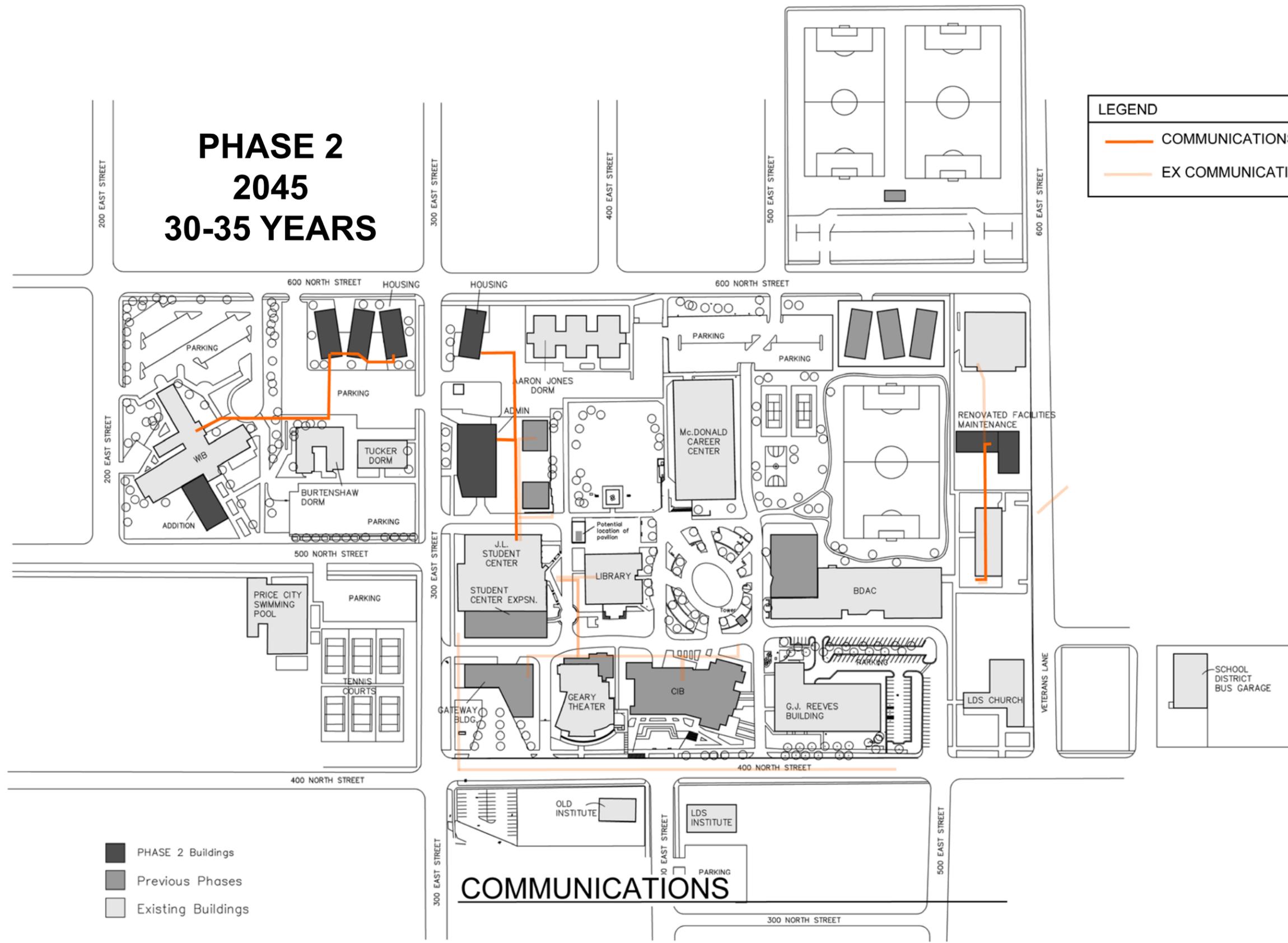
PHASE 1B 2030 10-15 YEARS

LEGEND	
T	DISTRIBUTION TRANSFORMER
S	12.5KV SWITCH
	OVERHEAD PRICE POWER LINES
	UG 12.5KV POWER
	EX UG 12.5KV POWER



PHASE 2 2045 30-35 YEARS

LEGEND	
	COMMUNICATIONS
	EX COMMUNICATIONS

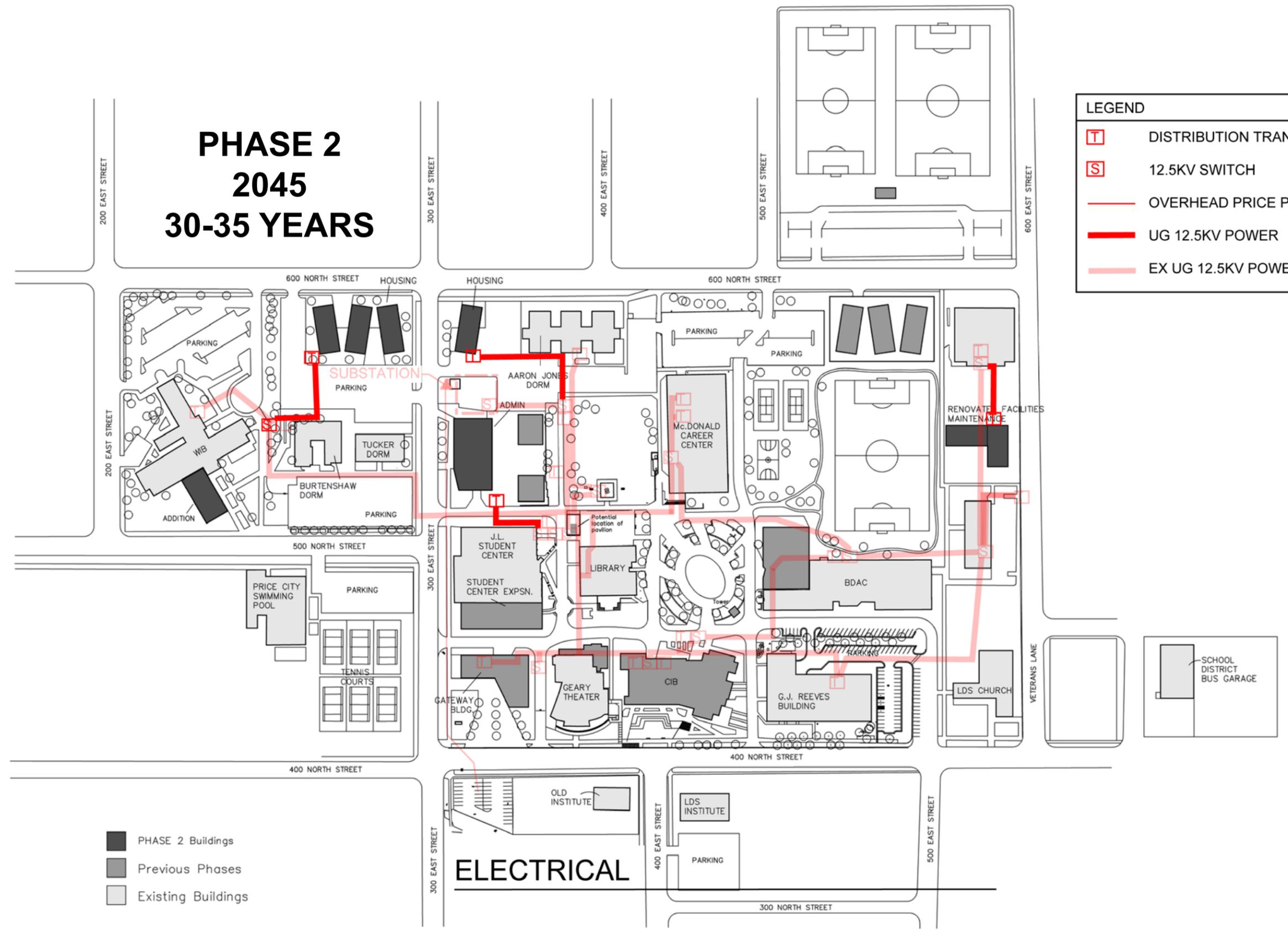


-  PHASE 2 Buildings
-  Previous Phases
-  Existing Buildings

COMMUNICATIONS

PHASE 2 2045 30-35 YEARS

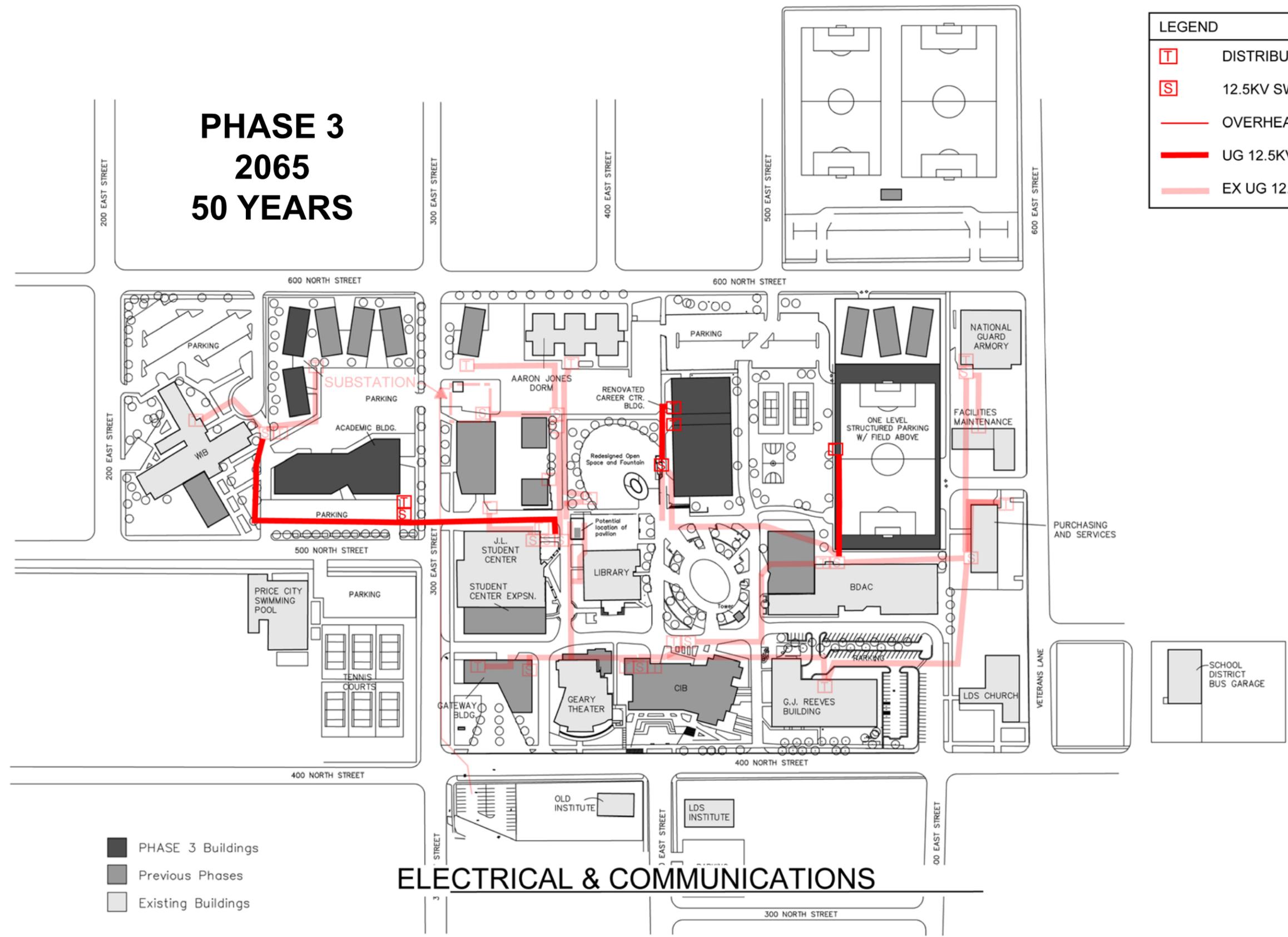
LEGEND	
	DISTRIBUTION TRANSFORMER
	12.5KV SWITCH
	OVERHEAD PRICE POWER LINES
	UG 12.5KV POWER
	EX UG 12.5KV POWER



ELECTRICAL

PHASE 3 2065 50 YEARS

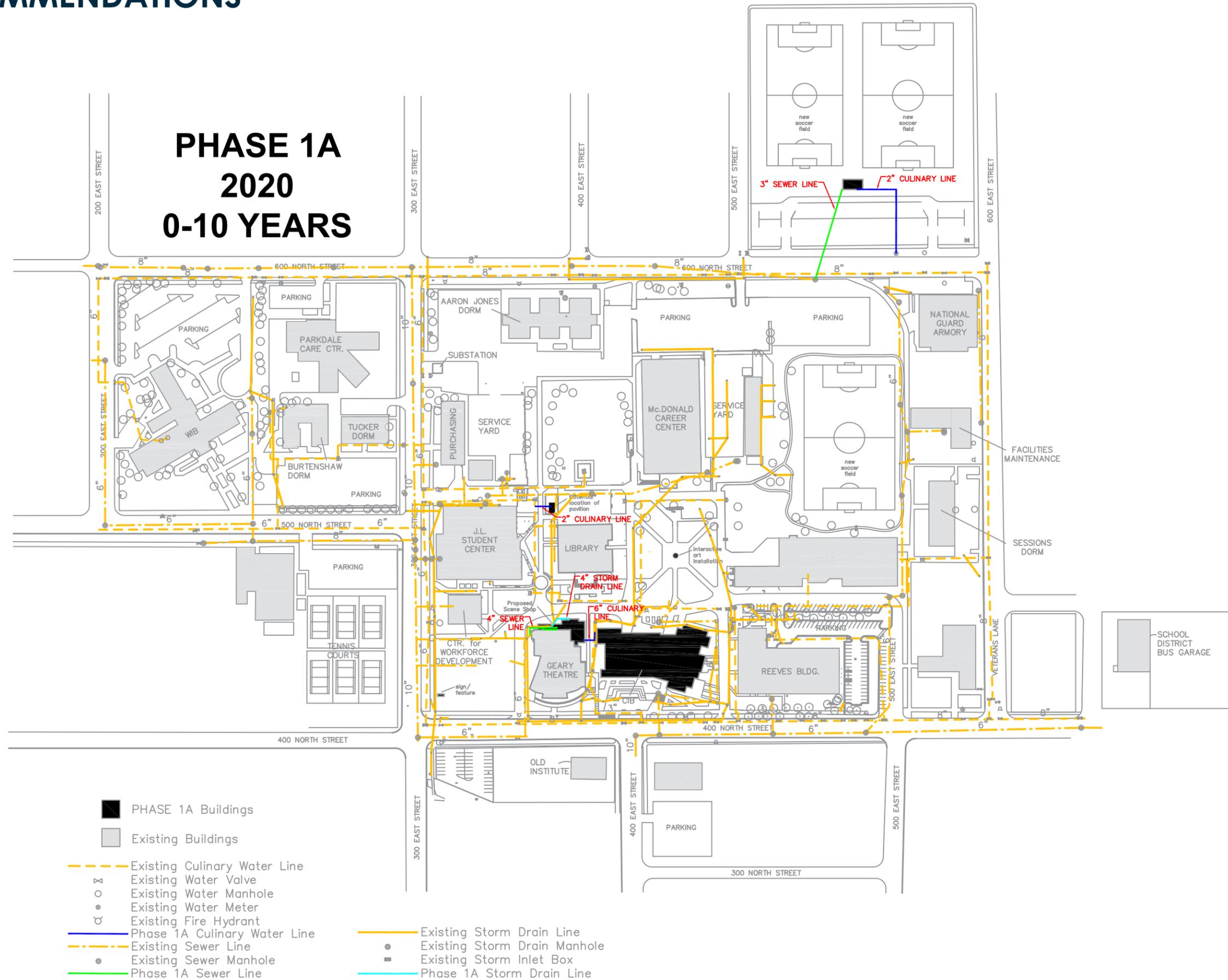
LEGEND	
	DISTRIBUTION TRANSFORMER
	12.5KV SWITCH
	OVERHEAD PRICE POWER LINES
	UG 12.5KV POWER
	EX UG 12.5KV POWER



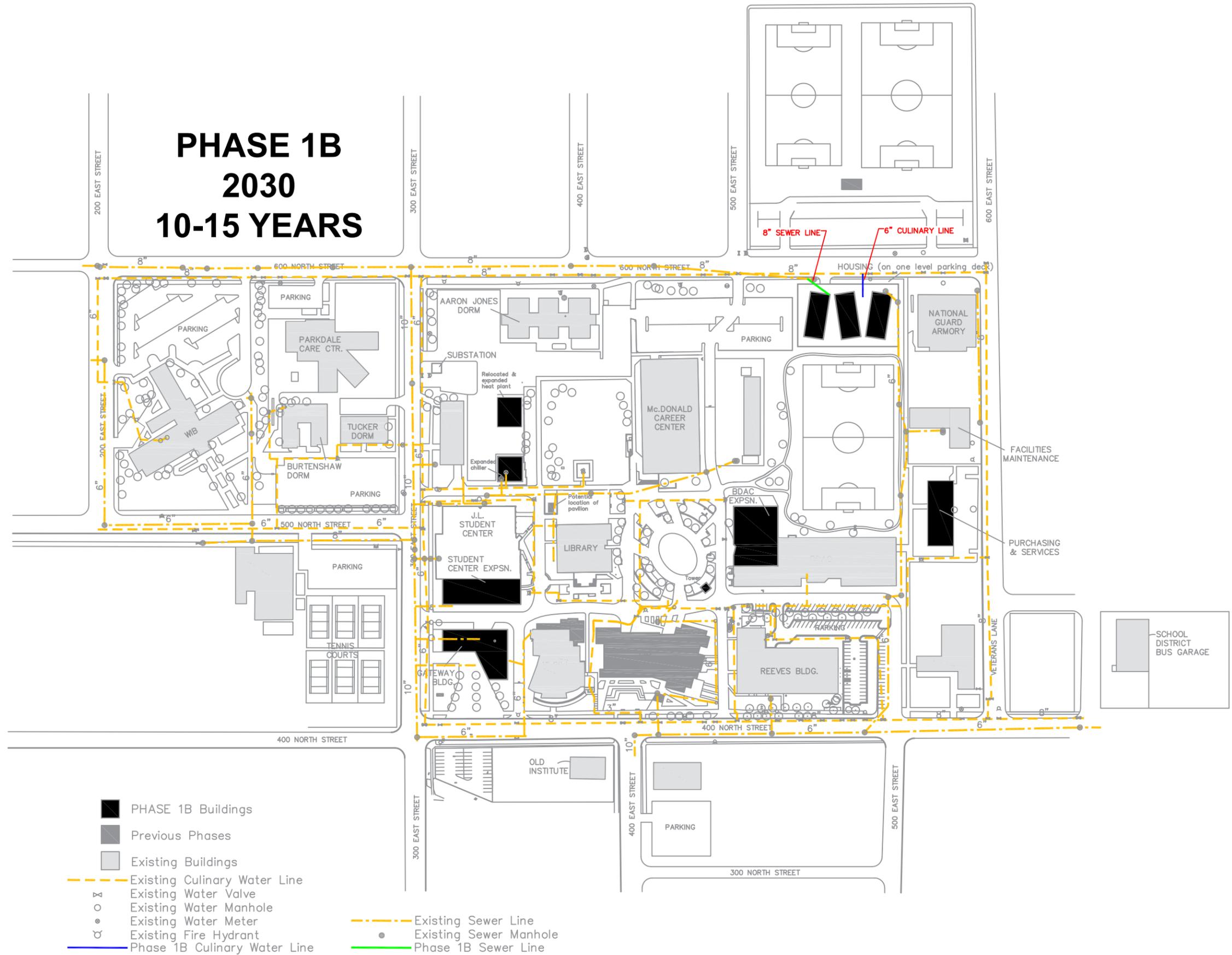
-  PHASE 3 Buildings
-  Previous Phases
-  Existing Buildings

ELECTRICAL & COMMUNICATIONS

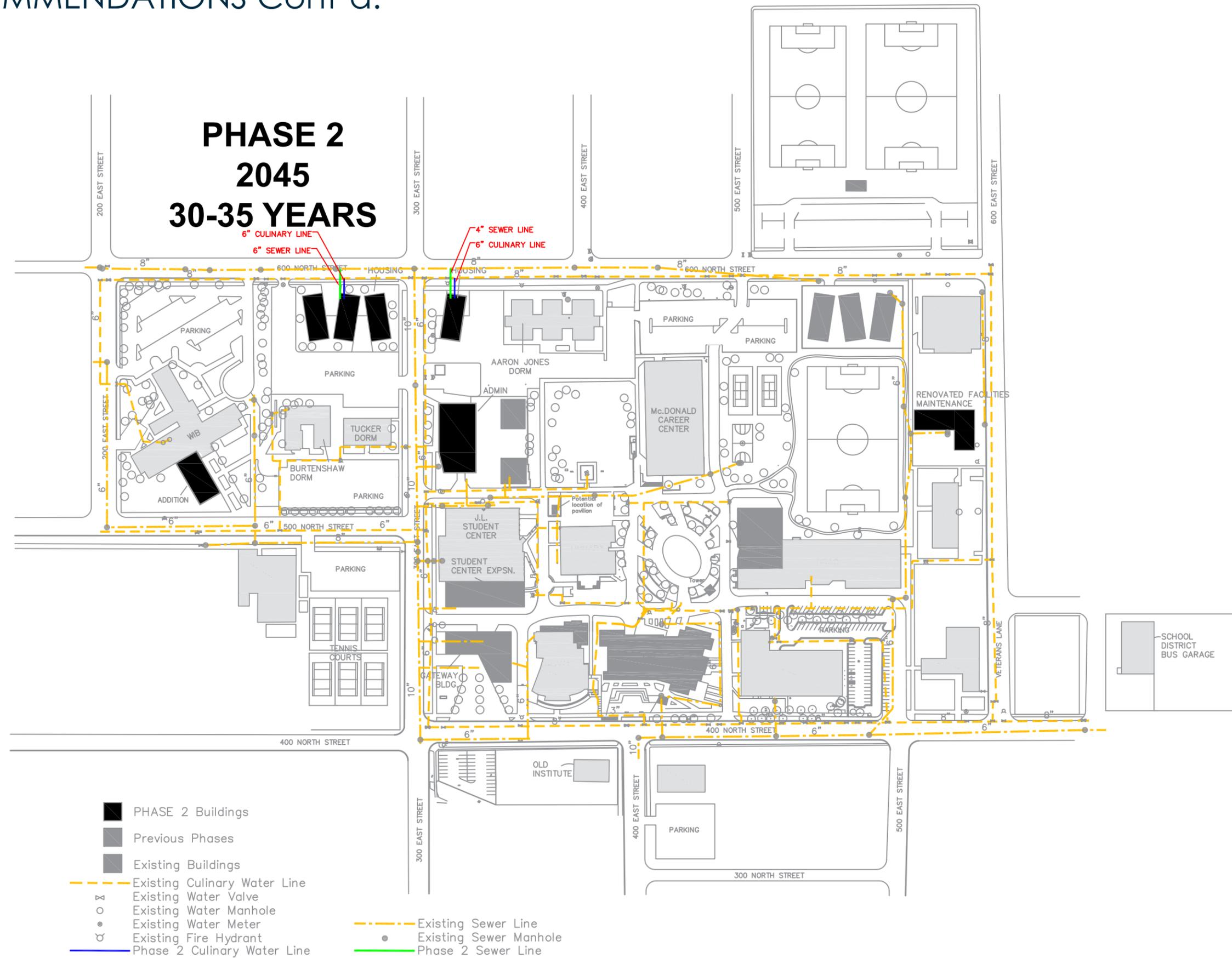
CIVIL RECOMMENDATIONS



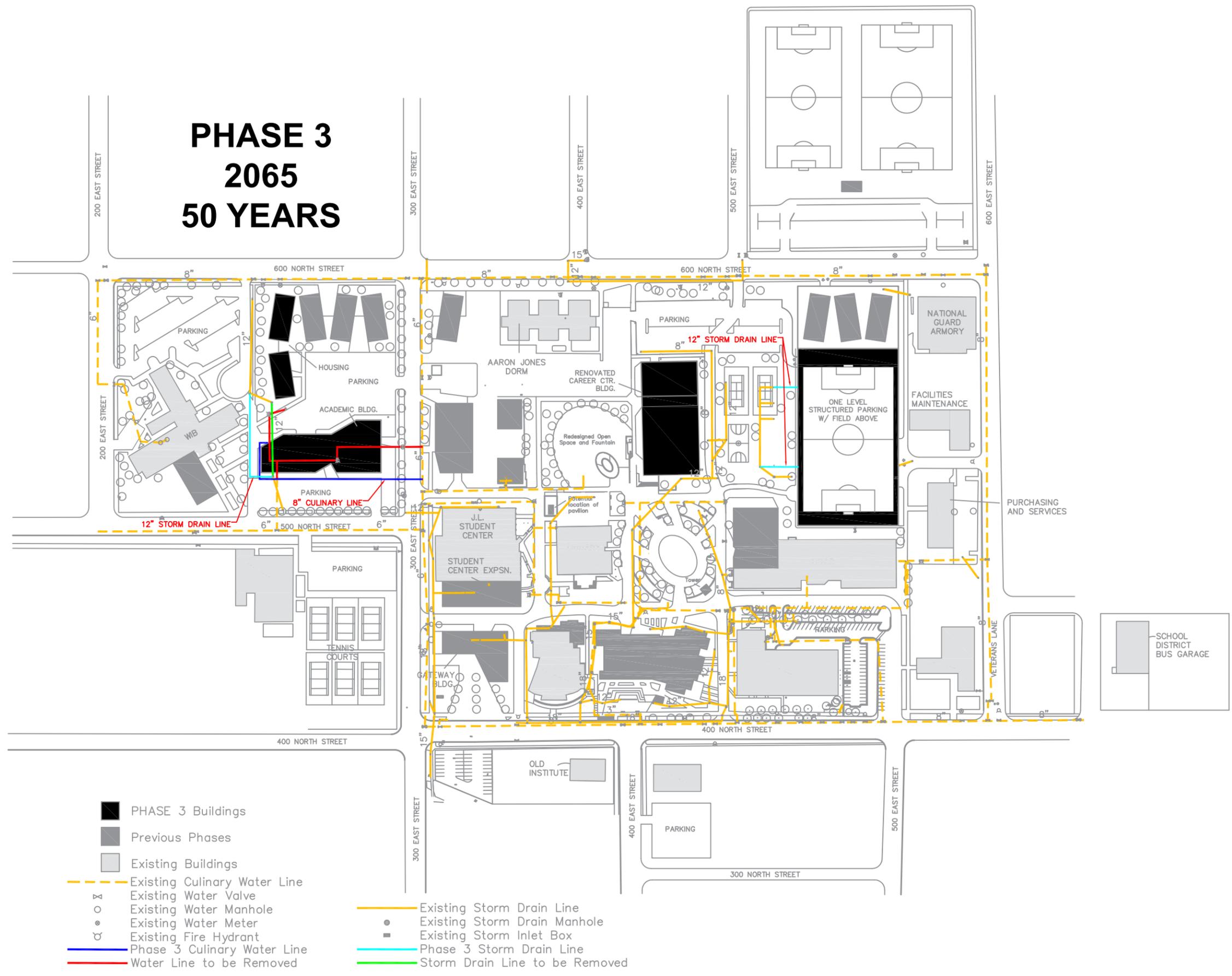
PHASE 1B 2030 10-15 YEARS



CIVIL RECOMMENDATIONS Cont'd.

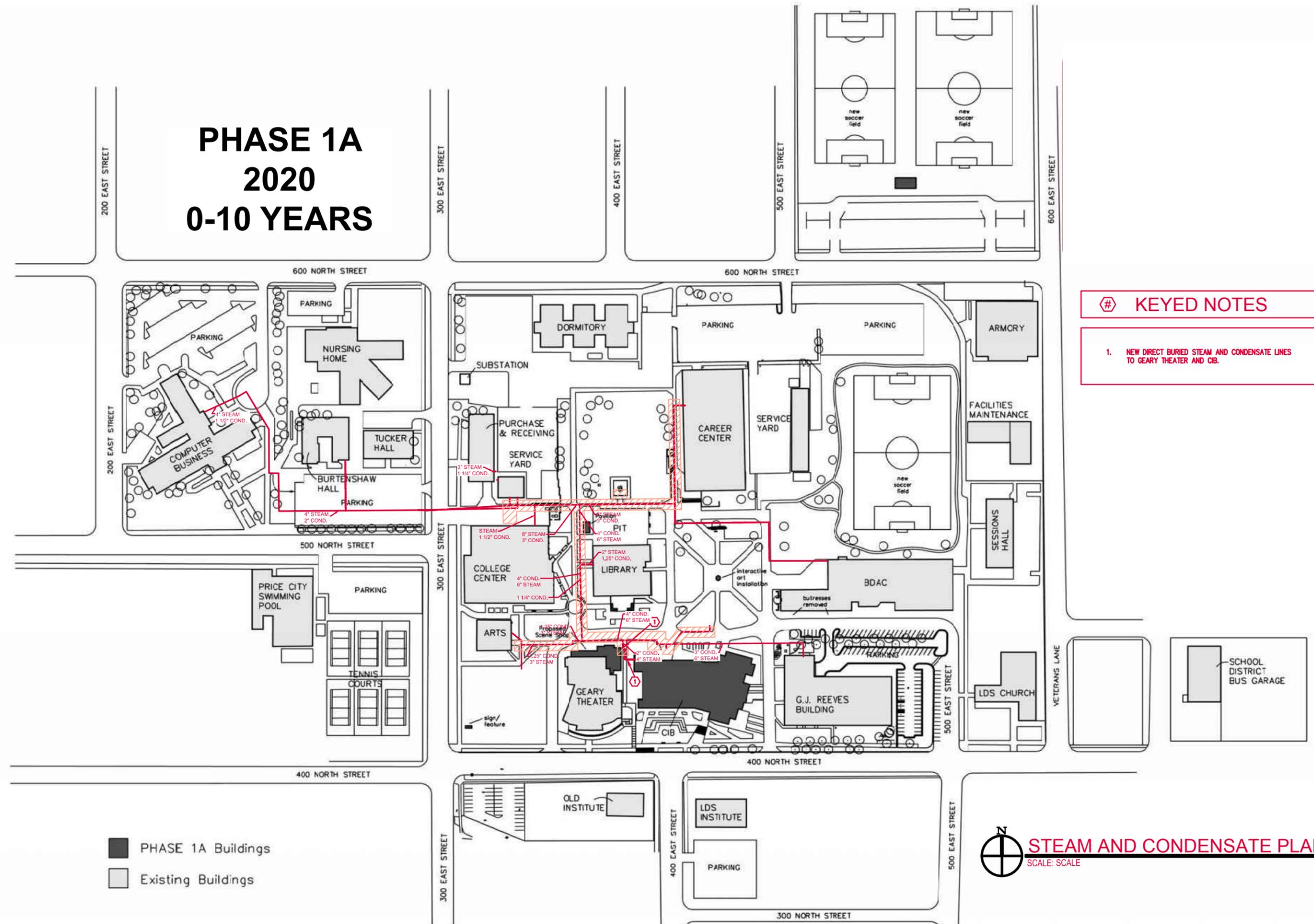


PHASE 3 2065 50 YEARS



- PHASE 3 Buildings
- Previous Phases
- Existing Buildings
- Existing Culinary Water Line
- Existing Water Valve
- Existing Water Manhole
- Existing Water Meter
- Existing Fire Hydrant
- Phase 3 Culinary Water Line
- Water Line to be Removed
- Existing Storm Drain Line
- Existing Storm Drain Manhole
- Existing Storm Inlet Box
- Phase 3 Storm Drain Line
- Storm Drain Line to be Removed

MECHANICAL RECOMMENDATIONS



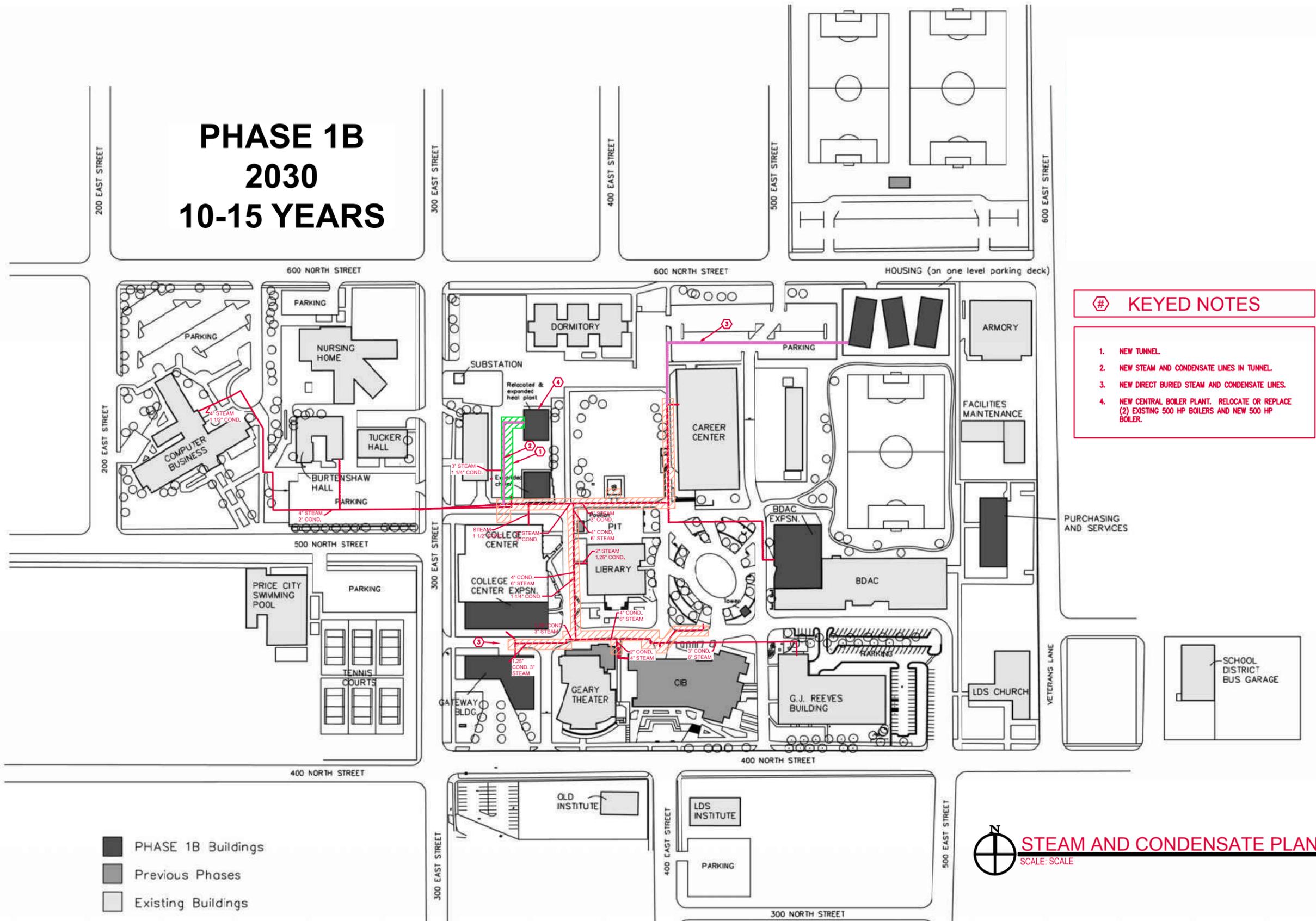
KEYED NOTES

1. NEW DIRECT BURIED STEAM AND CONDENSATE LINES TO GEARY THEATER AND CIB.

■ PHASE 1A Buildings
 ■ Existing Buildings

⊕ STEAM AND CONDENSATE PLAN
 SCALE: SCALE

PHASE 1B 2030 10-15 YEARS

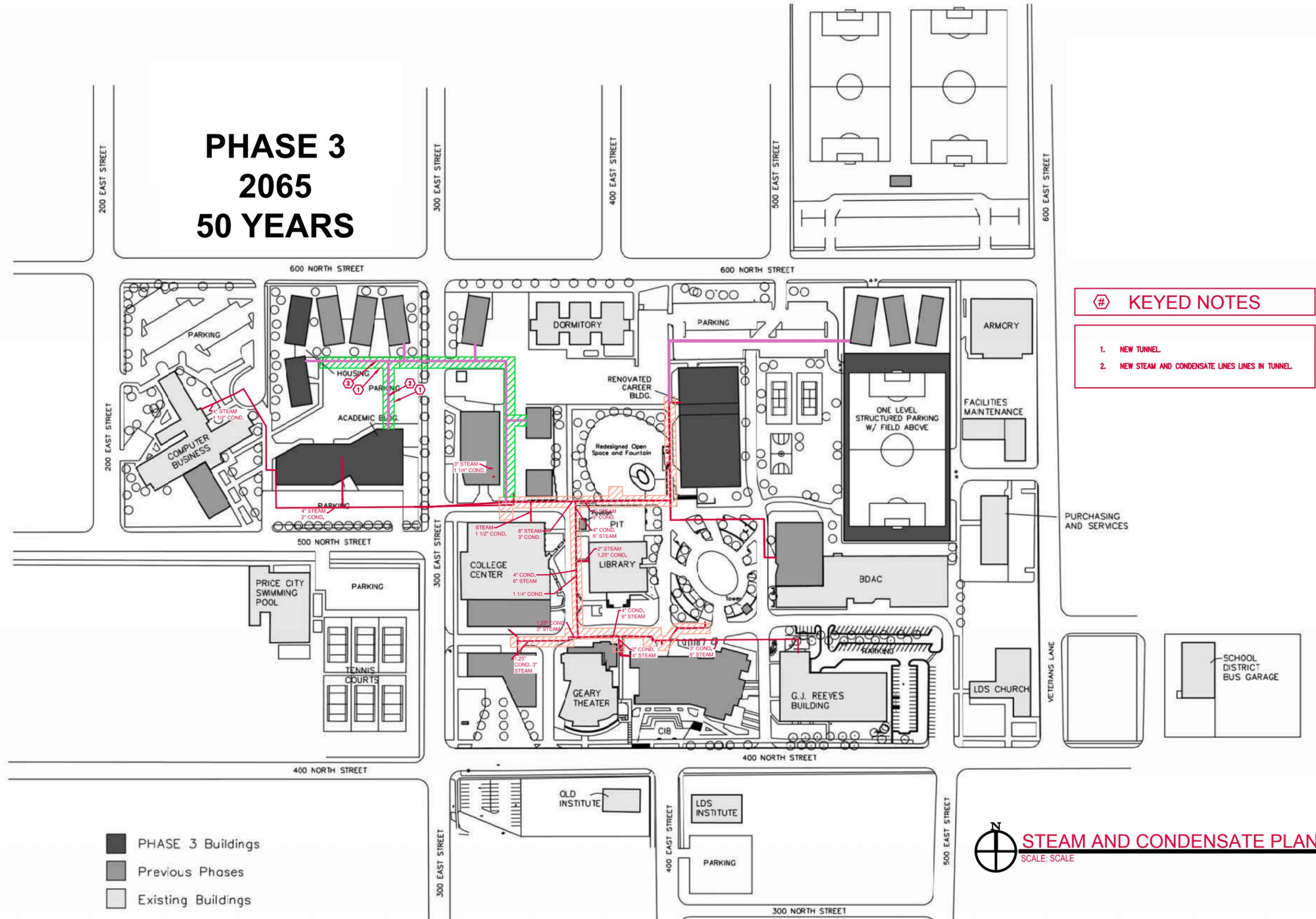


- # KEYED NOTES
1. NEW TUNNEL.
 2. NEW STEAM AND CONDENSATE LINES IN TUNNEL.
 3. NEW DIRECT BURIED STEAM AND CONDENSATE LINES.
 4. NEW CENTRAL BOILER PLANT. RELOCATE OR REPLACE (2) EXISTING 500 HP BOILERS AND NEW 500 HP BOILER.

- PHASE 1B Buildings
- Previous Phases
- Existing Buildings

STEAM AND CONDENSATE PLAN
 SCALE: SCALE

PHASE 3 2065 50 YEARS

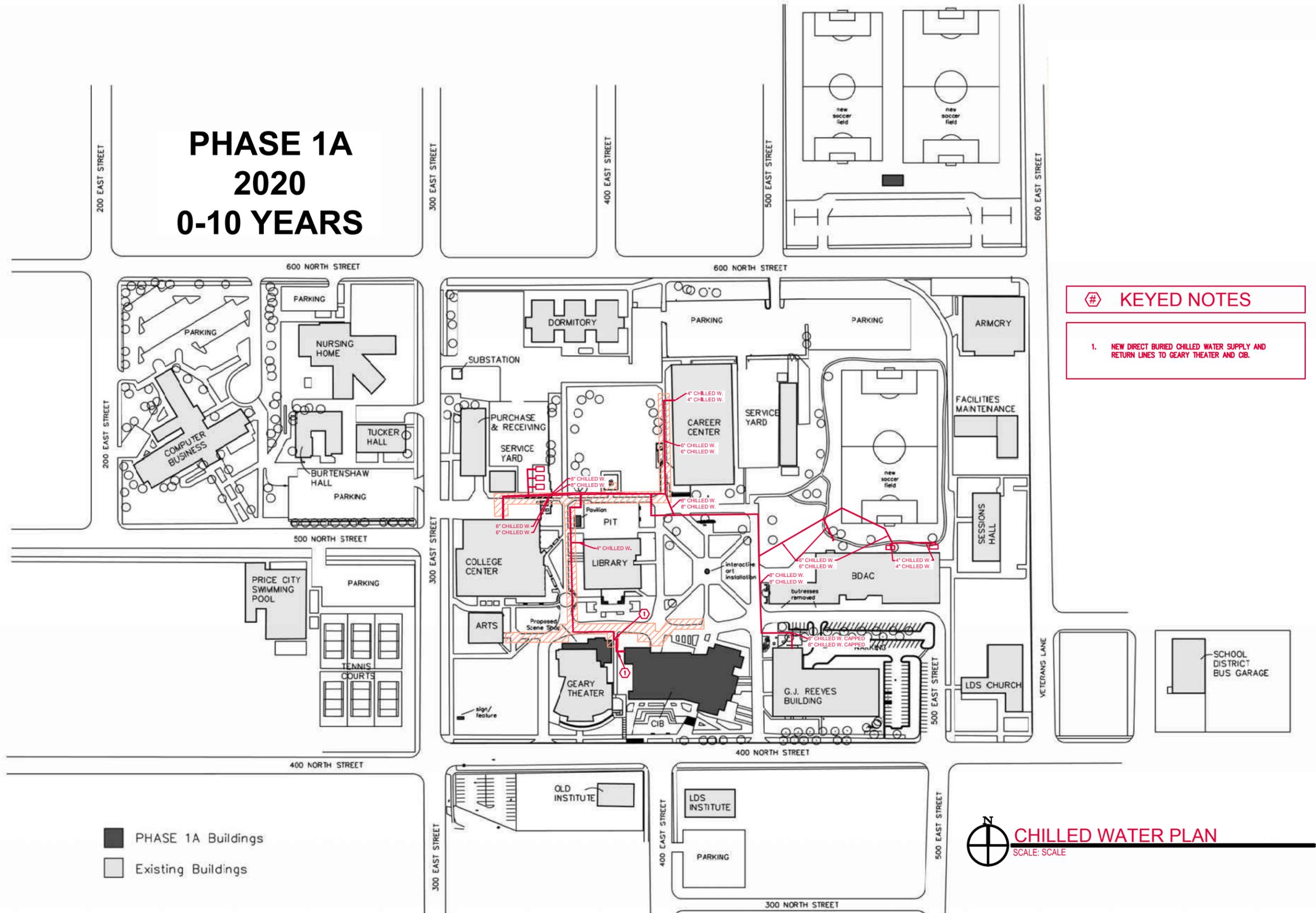


- # KEYED NOTES
1. NEW TUNNEL.
 2. NEW STEAM AND CONDENSATE LINES IN TUNNEL.

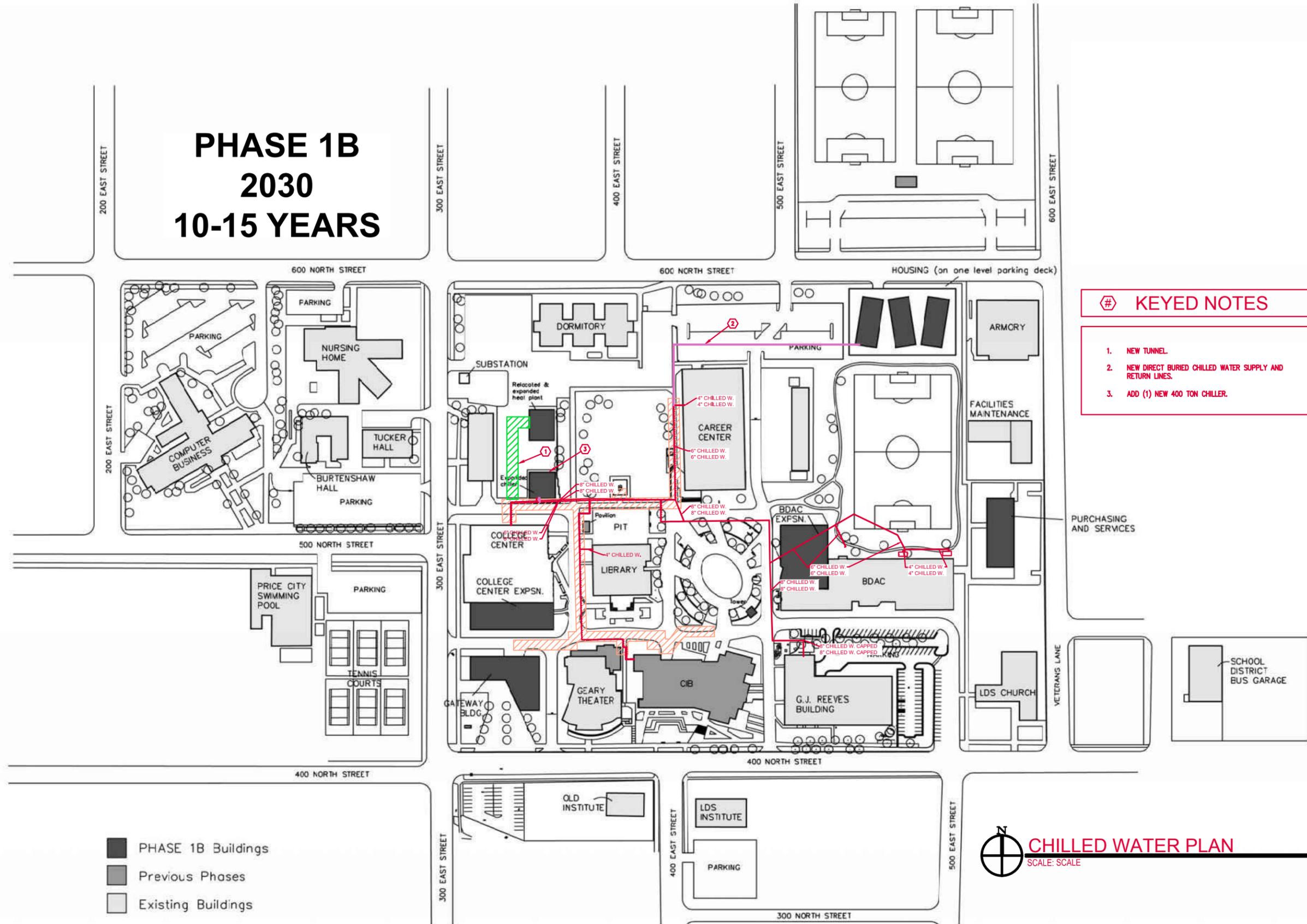
- PHASE 3 Buildings
- Previous Phases
- Existing Buildings

STEAM AND CONDENSATE PLAN
 SCALE: SCALE

MECHANICAL RECOMMENDATIONS Cont'd.



PHASE 1B 2030 10-15 YEARS

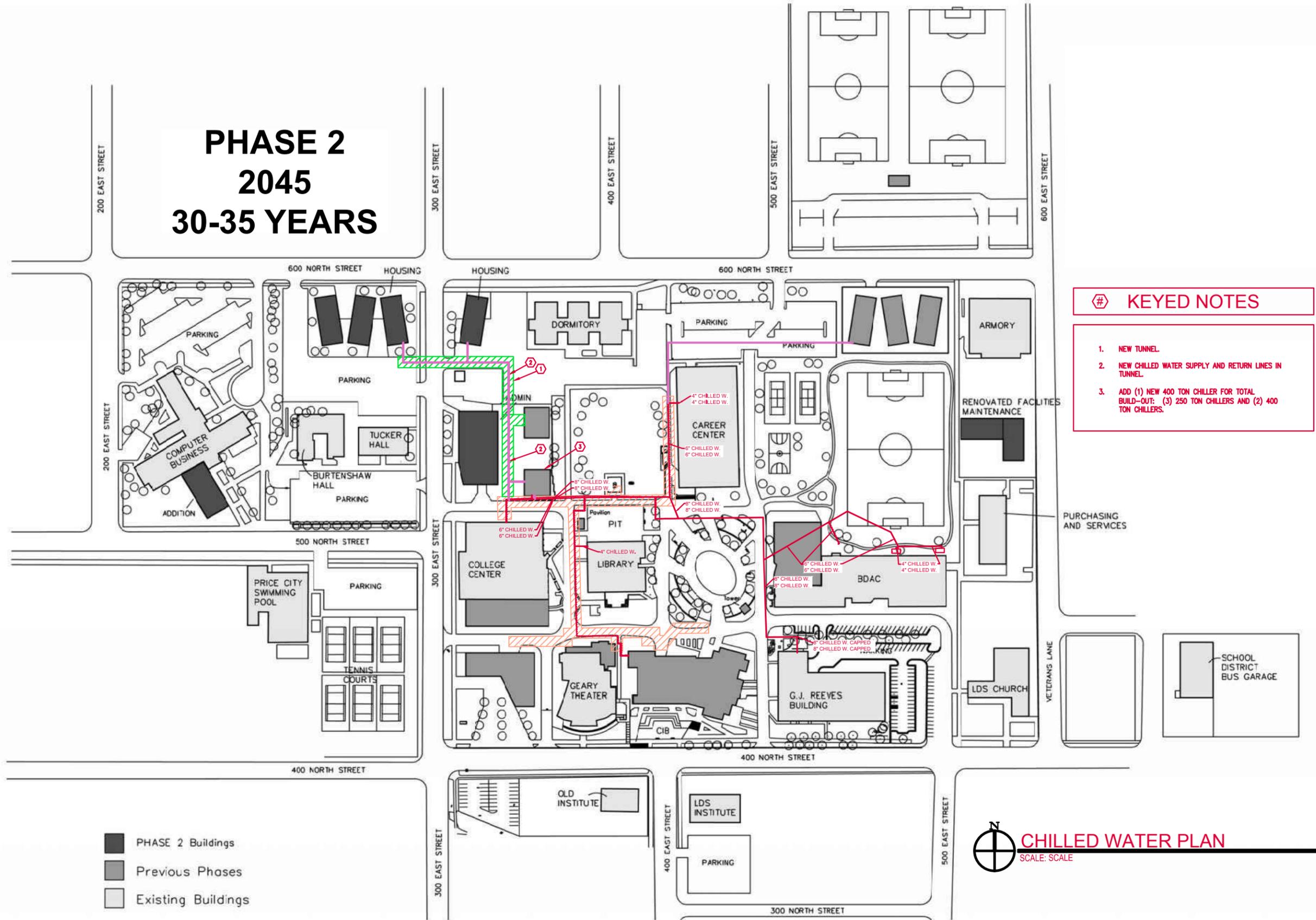


- # KEYED NOTES
1. NEW TUNNEL.
 2. NEW DIRECT BURIED CHILLED WATER SUPPLY AND RETURN LINES.
 3. ADD (1) NEW 400 TON CHILLER.

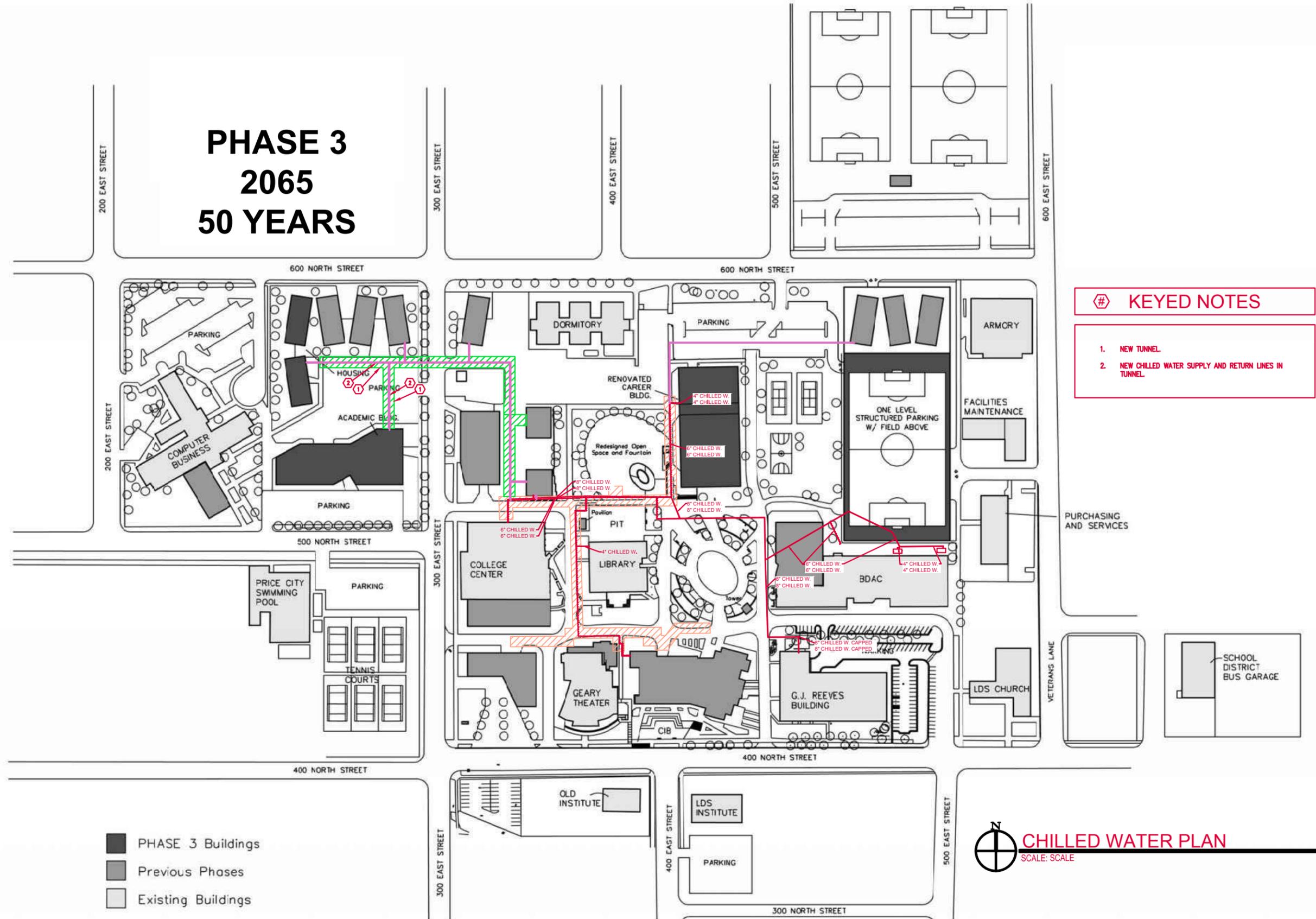
- PHASE 1B Buildings
- Previous Phases
- Existing Buildings

CHILLED WATER PLAN
SCALE: SCALE

MECHANICAL RECOMMENDATIONS Cont'd.



PHASE 3 2065 50 YEARS



- # KEYED NOTES
1. NEW TUNNEL.
 2. NEW CHILLED WATER SUPPLY AND RETURN LINES IN TUNNEL.

- PHASE 3 Buildings
- Previous Phases
- Existing Buildings

CHILLED WATER PLAN
SCALE: SCALE

SECTION 2– FACILITY ANALYSIS

2.1 PREVIOUS IRRIGATION STUDIES AND DESIGN CRITERIA EVALUATION

The only known secondary system in the immediate area is currently being installed at the Carbon County Fairgrounds. The system at the fairgrounds draws water from a canal into storage ponds and then the water from the storage ponds is filtered and pumped for lawn irrigation and dust control within the fairgrounds complex. No other studies or designs have been developed for the use of secondary water for non-agricultural use such as lawns in the Price area. Price City Engineers were consulted on the history of any attempts to convert culinary irrigation to secondary irrigation within city limits and they were not aware of any such connections.

Other areas outside of Carbon County have systems similar to the proposed system at the Carbon County Fairgrounds. One such system is at the Millsite Golf Course in Ferron, Utah. The irrigation system at the golf course was recently retro-fitted to provide a higher quality and more dependable irrigation system. The golf course system draws water from Millsite Reservoir and pumps the water, over 200 vertical feet, throughout the golf course. This system requires the use of several Variable Frequency Drive (VFD) pumps. A VFD pump operates at variable flows to maintain a pre-set operating pressure. As the water pressure drops due to irrigation valves opening, the pumps automatically increase the flow until the pressure returns to the pre-set limit. This type of pump allows much more flexibility in the operation of the system. It is also more effective to implement into an existing irrigation system over a constant head pump which requires precise information on the current system (i.e. number of sprinkler heads, types of sprinkler heads, and number of sprinkler heads irrigating at one time). Therefore, the proposed USU-CEU secondary irrigation system will utilize the benefits of a VFD pumping system similar to the system shown in Figure 2 for each design alternative. More detailed information about the VFD pumps is located in Appendix C.



Figure 2: Rain Bird VFD Pump Station

SECTION 2– FACILITY ANALYSIS

2.2 EXISTING WATER DEMAND AND AVAILABLE WATER SHARES

A critical part of model development is the establishment of water use. It provides the basis for the water supply needs and drives the distribution system recommendations. USU-CEU's current watering parameters were first established, and then the current irrigation system demand was achieved by comparing the DWR Annual Consumptive Use calculations and Price City's metered data on the Durrant lawn. The Durrant lawn is located northeast of campus and contains no buildings; therefore, it is a prime location to obtain current irrigation demands. Metered data for the Durrant lawn during the 2011 watering season is shown in Table 1.

Month	Gallons (metered value)	Gallons per Acre (Durrant Lawn ≈ 7.64 acres)
April, 2011	277,800	36,361
May, 2011	604,200	79,084
June, 2011	767,000	100,393
July, 2011	1,623,600	212,513
August, 2011	1,295,600	169,581
September, 2011	1,641,200	214,817
October, 2011	1,066,900	139,647
December, 2011	0	0

With the data from Table 1, the irrigation demands for the Durrant lawn were reduced to a per acre demand and then scaled to represent the 22.8 acres of campus landscape that is irrigated. Table 3 shows the current campus irrigation demands derived from the Durrant lawn metered data from Table 1. The peak demand was calculated by using the September, 2011 data and then reducing it down to peak daily water use. The average demand was calculated using the average water use for the Durrant lawn during the months of April through October of 2011.

The irrigation water use parameters for USU-CEU were established using an irrigation season common to central Utah and the watering schedule set by Price City as shown in Table 2.

SECTION 2– FACILITY ANALYSIS

TABLE 2: Water Use Parameters		
Parameter		Units
Irrigation Season	6	months
	182	days
Irrigation Schedule	Tuesday, Thursday, Saturday	days/week
Irrigation Period	12:01 a.m. to 8:00 a.m. and 5:00 p.m. to 12 p.m.	
	15	hours

TABLE 3: Current Campus Irrigation Demands (Durrant derived)			
Water Use	Calculations	Units	Notes
Peak Daily Water Use	371,887	gallons/day	
Average Daily Water Use	274,795	gallons/day	
Peak Hourly Use	24,792	gallons/hour	(over 15 hours)
Average Hourly Use	18,320	gallons/hour	(over 15 hours)
Peak use per Minute	413	gallons/min	
Average Use per Minute	305	gallons/min	

USU-CEU currently owns 41 Scofield Reservoir water shares which are available through the Price/Wellington Canal. According to Keith Grogan, Water Master of the Price/Wellington Canal Company, each reservoir share is equal to one acre foot of water. In conversations with Mr. Grogan, he explained that the water shares through the Price/Wellington Canal can experience up to a 15% shrink due to drought. This becomes an important design criterion to determine how many water shares USU-CEU needs to supply their irrigation system during a normal water year and years of drought. Table 4 outlines the number of water shares currently owned and the total project water shares needed. The required water shares needed to meet the current campus demand is 67 water shares (67 acre feet). The 67 water shares needed is based on the Utah Division of

SECTION 2– FACILITY ANALYSIS

Water Rights consumptive use value. The needed water shares based off the Durrant Model was calculated using the average daily water use from the model and scaling that value (274,795 gallons per day) to represent an average annual water use (see Equation 1).

$$\frac{274,795 \text{ gal}}{\text{day}} * \frac{3 \text{ days}}{\text{week}} * \frac{4.43 \text{ weeks}}{\text{month}} * 6 \text{ months} * \frac{1 \text{ acre ft}}{3.26 E^5 \text{ gal}} = 67 \text{ acre feet}$$

Equation 1: Average Annual Water Use (Durrant Model)

To verify the accuracy of the Durrant Model the calculated 67 acre feet was compared to the Utah Division of Water Rights annual consumptive use of 22.9 inches per acre for lawns. The conversion of inches per acre into acre feet is shown in Equation 2.

$$\frac{22.9 \text{ inches/year}}{\text{acre}} * \frac{1 \text{ ft}}{12 \text{ in}} * 65\% \text{ efficiency} * 23 \text{ acres} = \frac{67 \text{ acre feet}}{\text{acre}}$$

Equation 2: Utah DWR Annual Consumptive Use

Because the results of the Utah DWR Annual Consumptive Use calculation match the Durrant Model a higher confidence level exists of the accuracy of the Durrant model and using it for the preliminary design of the USU-CEU irrigation system.

To account for the 15% shrink, the needed 67 water shares were increased to allow the demand to be met during years of drought as shown in Table 4.

TABLE 4: USU-CEU Water Shares		
	Current Water Shares	Required Water Shares
Share Type	Scofield Reservoir	Scofield Reservoir
Number of Shares	41	79
Acre Feet per Share	1	1
Allowable Shrink	-	15%
Total Acre-Feet	41	79
Usable Acre-Feet during drought	35	67

SECTION 2– FACILITY ANALYSIS

Using the Utah DWR figures from Table 4, USU-CEU will need to acquire an additional 38 Scofield reservoir water shares to convert to a secondary water system to meet the current demand. The current purchase price of Scofield Reservoir water shares is approximately \$1800. Another option available is to lease water shares which, currently lease at a cost between \$12 and \$16 per share per year.

Water Rights are based upon beneficial use of water on irrigated acres. The State Engineer (Water Rights) determines how much water (acre-feet per acre) is used on irrigated land in each region of the state. USU-CEU has 23 acres under irrigation and the current duty in that region is 5 acre-feet per acre. Therefore, this would limit USU-CEU to 115 total shares of Scofield Water to irrigate the 23 acres of the campus.

However, during drought years, generally all shareholders are asked to reduce water consumption on an equal basis. That being said, USU-CEU may not be able to fully irrigate all its acreage during a drought no matter whether it owns 79 or 115 shares of water.

2.3 FUTURE GROWTH PROJECTIONS FOR IRRIGATION

The future growth plans for USU-CEU were considered as part of the design for the proposed secondary system. As the campus currently stands, the only growth the campus may experience is the increase of buildings within the current campus boundary. The addition of new buildings on campus would reduce the amount of landscaped area needing irrigation. Therefore, any improvements to the campus will reduce the existing demand on the system.

Another condition that was considered in the design was the possibility of the Price/Wellington Canal being piped. In conversations with Keith Grogan, Water Master of the Price/Wellington Canal Company, he indicated that the Canal Company has the intent to pipe the canal and is in the process of applying for funding through the Bureau of Reclamation. Therefore, both options of the canal being piped and remaining as an open channel were considered in the design alternatives. Though both options were considered, the two site alternatives discussed in Section 2.5 are the same whether the water is delivered from an open channel canal or a pipeline.

The open channel canal option reflects a higher cost than tying into an irrigation pipe. The piped system would eliminate the construction of a diversion, trash screen, and inlet channel. Estimated cost of constructing the recommended secondary irrigation system for tying into both an open channel canal and piped canal can be found in Appendix A. The cost difference for Site 1 and Site 2 is negligible for tying into a piped canal. Therefore, the cost estimate for tying into a piped canal is the same for Site 1 and Site 2.

SECTION 2– FACILITY ANALYSIS

2.4 RAW WATER AND IRRIGATION LAYOUT ALTERNATIVES AND TREATMENT OPTIONS



Figure 3 Proposed Water Treatment Sites (Google Earth, 2012)

2.4.1 POINT OF DIVERSION

In order for USU-CEU to utilize canal water for sprinkler irrigation purposes the water will have to be treated to remove sediment prior to entering the pressurized irrigation system. Two sites have been identified as possible locations for water treatment. The two different alternatives are shown on Figure 3 as Site 1 and Site 2. The first alternative, Site 1, is to utilize a portion of the existing USU-CEU parking lot located on the south east corner of 400 North and 300 East. This location would be a prime site for each alternative due to the secondary source being adjacent to the parking lot. A diversion, south of the parking lot, would be placed in the canal to divert the USU-CEU water shares through a trash screen and into a pond where the suspended solids (moss, sand, silt, etc.) would be removed. The treated water would then be pumped into the current campus irrigation system.

The second alternative site 2 is on the north east corner of 400 North and 300 East. This alternative would require the raw water to be diverted and screened near the canal, then pumped to Site 2. At Site 2 the influent would be treated by one of the options discussed below to remove the suspended solids. The effluent would then be pumped into the

SECTION 2– FACILITY ANALYSIS

current irrigation system. Detailed cost estimates for each Alternative are included in Appendix A and the maps for each Alternative are shown in Appendix B.

2.4.2 RAW WATER TREATMENT OPTIONS

PRETREATMENT

Preliminary treatment involves the process of screening out the large debris (i.e. sticks and fallen vegetation) that is commonly found in open channel canals. The process of screening the large debris from the raw canal water involves the use of a traveling screen or manually cleaned trash rack prior to filtering, pumping, and irrigating. Pretreatment is required prior to all secondary treatment methods.

Option 1) Sedimentation Basin

Sedimentation basins operate on the principle of detaining the influent long enough to remove solid particles from suspension by gravity. The settled particles are then removed by process of a mechanical sludge removal apparatus or flushed out downstream of the basin using water pressure from the basin. Figure 4 shows a section view of the basic design of a sedimentation basin.

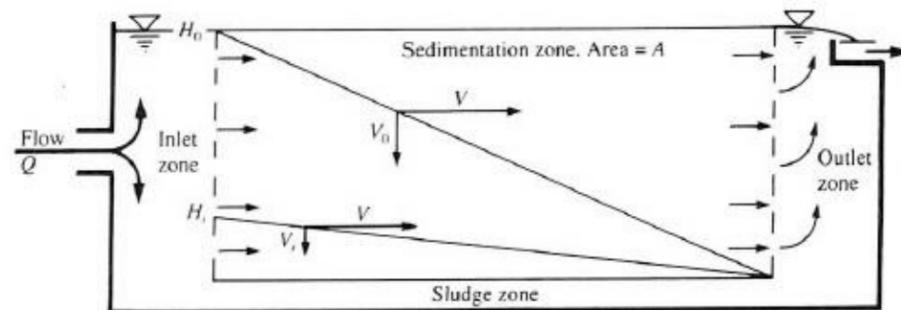


Figure 4 Sedimentation Basin section view

The design is dependent on the desired overflow rate (this value is set to equal the peak demand). With the known overflow rate the basin can be sized for depth (ft), weir loading (gpd/ft), horizontal velocity (ft/min), detention time (hours), length to width ratio, and length to depth ratio. For optimized functionality Table 5 outlines these design criteria.

SECTION 2– FACILITY ANALYSIS

TABLE 5 Design Criteria for Sedimentation Basins

Design Parameter	Rectangular and Circular Sedimentation Basins
Overflow Rate (gpd/ft ²)	500-1400
Depth (ft)	10-16
Weir Loading (gpd/ft)	18,000 -24,000
Horizontal Velocity (ft/min)	1-4
Detention Time (hours)	1.5-4
Length to Width Ratio	≥5
Length to Depth Ratio	≥15

Option 2) Gravity Granular-Media Filtration

During filtration, the water enters above the filter media through an inlet flume. After passing downward through the granular media (depth of 24-30 in.) and the supporting gravel bed, it is collected in the under-drain system and discharged through the under-drain pipe. To backwash the dirty filter, the water level is lowered down near the surface of the granular bed, and the media is scoured by either upward flow of air alone or by upward flow of air and water concurrently. Wash water entering the under-drain is distributed under the media and flows upward hydraulically, expanding the media and conveying out impurities. The turbid wash water is collected in the wash-water troughs that discharge to the outlet flume as shown in Figure 5.

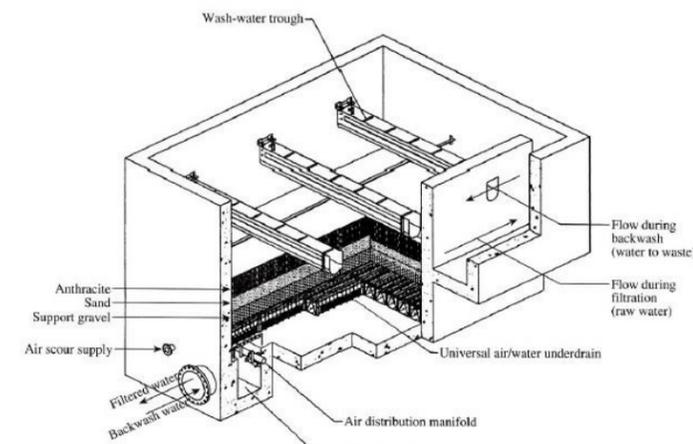


Figure 5: Gravity Granular-Media Filter section view (Water Supply & Pollution Control, Eighth Edition)

SECTION 2– FACILITY ANALYSIS

Option 3) Direct Filtration

The process of direct filtration involves removing the suspended solids in the filter media alone. There are several types of direct media type filters. The most common types are Screen Filters and Disk Filters, both of which are available with or without an automatic backwashing feature.

The manually flushable screen/disk involves more periodic maintenance by requiring disassembly of the screen/disk to allow the screen or disk to be cleaned of collected solids. The flushable screen and disk is available in several mesh sizes to accommodate a wide range of turbidity removal.

The automatic backwashing filter provides high rate screen filter performance with the ability to be self-cleaning. The automatic backwashing filter/disk cleans itself by backwashing filtered water back through the media, thus removing the particles from the media and then discharging the backwashed water from the system. This process takes place automatically by predetermined time or pressure differentials. The screen/disk mesh is available in various sizes to accommodate varying turbidity. The automatic backwashing filters are more suitable for USU-CEU because they can provide worry free use due to the filters being low maintenance.

2.5 PREFERRED ALTERNATIVE, CONCEPTUAL DESIGN, AND O&M REQUIREMENTS.

2.5.1 PREFERRED RAW WATER TREATMENT ALTERNATIVE

The treatment options discussed in Section 2.4 are all proven methods to treat raw water, however not all are appropriate for the needs of USU-CEU. The alternative that best meets the needs for the USU-CEU campus is direct filtration. In Section 2.4.2, Option 3, several direct filtration methods were described. The most effective and efficient method of direct filtration for the Price/Wellington Canal is the automatic backwashing disk screen. Disk filters are more effective than screen type filters in this application due to the water quality of the Price/Wellington Canal. The Price/Wellington Canal carries a suspended load of sand, silt, and moss. The moss contained in the water can be problematic for a screen type filter and is most effectively filtered by disk type filters due to the dynamic design of the filter cartridge. An example of the disk filter is shown in Figure 6. The filter cartridge is made up of several stacked disks consisting of grooves forming a cylindrical filter element. As the water passes through the small grooves in between the disks the impurities are trapped. During the backwashing cycle the disks spin and separate allowing the filtered material to be flushed easily from the disks. More detailed information about the disk filters is located in Appendix C.

SECTION 2– FACILITY ANALYSIS



FIGURE 6: Automatic Backwashing Disk Filters

2.5.2 PREFERRED ALTERNATIVE WITH SITE 1 AND SITE 2 OPTIONS

As discussed in section 2.5.1, the preferred alternative is direct filtration with a disk type filter. The direct filtration system can be located on campus at either of the two different locations as discussed in section 2.4 and named Site 1 and Site 2. Alternative 1 describes the overall irrigation system with the filtration system located at Site 1, and Alternative 2 describes the overall irrigation system with the filtration system located at Site 2.

Alternative 1

Alternative 1 schematic is shown in Appendix B, drawing B-1 and the plan view is shown in drawing B-2. Alternative 1 diverts water through a slide gate and diversion channel into a basin. The diverted water passes through a traveling screen before entering a storage basin. The traveling screen removes the larger debris being carried in the canal. The storage basin function is to serve as storage and to provide the needed head for the pumping system. The system is designed to have a constant flow from the canal when irrigating. The storage would only be used to account for possible draw down during peak conditions or intermittent flow interruption. Two proposed options for the Alternative 1 storage basin are a 60 minute; 24,000 gallon, (20x20x15ft) storage basin and a 20 minute; 8,000 gallon, (10x10x15ft) storage basin. The recommended basin storage is 24,000 gallons, enough to provide 60 minute of storage at peak flow, to accommodate varying conditions (i.e. canal flows, debris buildup on trash screen). The minimum recommended volumetric storage of 8,000 gallons provides enough storage for 20 minutes at peak instantaneous flow to compensate for peak demand draw down. Appendix A includes an engineer's estimate for 20 minute and 60 minute wet well storage.

The water in the storage is then pulled from the storage basin by two 20hp submersible VFD turbine pumps. The pumps and 6-inch main will be designed to provide a peak flow of 413 gpm to the campus irrigation system and provide a minimum static pressure of 50 psi at the highest campus elevation of 5675 ft. Static pressures were used for this report to determine approximate pressure. A network analysis will be conducted during the design phase to more accurately determine the dynamic pressure. The pumps will be

SECTION 2– FACILITY ANALYSIS

designed to maintain this pressure with a flow range between 50 gpm and 413 gpm. The water passes through the pumps and then through the disk filtration system. The proposed automatic backwashing disk filter will remove the suspended solids from the influent and discharge the suspended solids back into the canal. After discussions with the Price/Wellington Water Commissioner, it has been determined that they will allow USU/CEU to discharge the screened/filtered solids back into the canal system. From the disk filter the water is then distributed throughout the campus by the proposed installation of a 6-inch irrigation main. The main irrigation line will route water from the pump house to the Durrant Lawn. This main irrigation line will provide the water to the laterals that branch off the main line to provide the demand to the other irrigation service connections. Smaller pipe sizes will tee off the 6" irrigation main to irrigate landscaped zones throughout the campus. These smaller pipe sizes were estimated based on applying the Durrant lawn demand per acre and the estimated irrigable acreage.

Alternative 2

Alternative 2 schematic is shown in appendix B, drawing B-2 and the plan view is shown in drawing B-3. The filtration and storage system would be located at Site 2 as described in section 2.4. Alternative 2 would require a similar diversion setup to Alternative 1. There would be a slide gate and diversion channel with a traveling screen, but this would be routed through a small wet well and constant head pump (10 hp). This would pump 413 gpm through a 6-inch main to Site 2. At Site 2, a 20'x20' pond would be constructed. A trash rack would be installed at the inlet of the pipe leading to the two 20 hp pumps. The water passes through the pumps and through the disk filtration system. The pumps and 6-inch main will be designed to provide a peak flow of 413 gpm to the campus irrigation system and provide a minimum static pressure of 50 psi at the highest campus elevation of 5675 ft. The pumps will be designed to maintain this pressure with a flow range between 50 gpm and 413 gpm.

2.5.3 PRICE/WELLINGTON CANAL PIPING RAMIFICATIONS ON CAMPUS IRRIGATION SYSTEM

Included in Appendix A is the cost estimate for the piped canal scenario. If the canal is piped after USU-CEU installs a secondary irrigation system, the cost of retro-fitting the installed secondary system is shown on the attached cost estimate in the appendix. The time line for the piping of the Price/Wellington Canal is not certain as explained in Section 2.3 of this report. What is known at this time is the canal company will be applying for funding in the fall of 2012 from the Bureau of Reclamation. The chance of them getting funded depends on how well their application represents the necessity of their project. If the canal company does receive the funding they are requesting, the earliest estimate for construction is three years.

SECTION 2– FACILITY ANALYSIS

2.5.4 OVERALL PREFERRED RAW WATER TREATMENT ALTERNATIVE AND PREFERRED CAMPUS-WIDE IRRIGATION SYSTEM

To summarize section 2.5.1, 2.5.2, and 2.5.3, it has been determined that the overall preferred alternative will consist of a direct filtration system with a disk type filter. After discussions with USU, it has been determined that for this report that the more conservative Alternative 1 campus irrigation system is preferred. Alternative 1 consists of using Site 1 as the location for raw water treatment. The recommended basin storage is 24,000 gallons. This is enough to provide 60 minute of storage at peak flow, to accommodate varying conditions. As shown in the cost estimate for Alternative A-1 in Appendix A, the preferred alternative is for an open channel canal scenario. There are too many unknown variables to depend on for the Price/Wellington Canal being piped. The open channel canal was chosen because it is more conservative to conduct the cost evaluation and break even period calculations. This preferred alternative will be used in the following section for cost evaluation.

2.5.5 OPERATION & MAINTENANCE REQUIREMENTS AND COSTS

Operation and Maintenance requirements for the preferred alternative described in section 2.5.4 will only address additional costs imposed by changing from the current culinary irrigation system to the new secondary irrigation system. This is done to compare costs against the 'do nothing' alternative of leaving the current culinary irrigation system in place. According to area vendors and local users of the disk filter systems, there is little to no additional maintenance for maintaining the existing overall distribution system. It is anticipated that current maintenance levels will be sustained to maintain meters, valves, and sprinkler heads. The additional costs will consist of maintaining and operating the pump, filter, and the back wash systems, and the concrete basin. The new systems will be operating approximately 200 hours per month at a cost of \$1,050 per month for 6 months a year. Area pump vendors offer a yearly maintenance program at \$700 per year. The maintenance for the disk filter and backwash systems consist of minimal part replacement. It is recommended to have a bi-weekly check to observe the system backwash cycle. It is important to make sure all pressures are within the system limits before and after backwashing and to check the operation of backwash valves, pressure differential switches and controller. It is anticipated that a yearly cleaning and observation schedule will be needed to clean the backwash system and to check the condition of O-rings. It will take approximately 1 day to accomplish this task. The lifespan of the disk and spline for the filter system is approximately 8 years. For the campus system the filter system will require 4 disks. It is anticipated to replace the 4 disks every 8 years at \$125 each for a total of \$500. Finally, some sedimentation will build up in the storage basin. It is anticipated that the storage basin will need to be cleaned every 5 years if the canal system is not piped. A Vac Truck will be required at approximately \$2,000 every 3 years to remove the sediment from the storage basin. Below is a summary of the estimated annual costs for the additional operation and maintenance introduced by the preferred alternative:

SECTION 2– FACILITY ANALYSIS

Additional Yearly Operation & Maintenance Costs for the Preferred Alternative:

1- Electrical Costs:	\$6,285
2- Pump Maintenance:	\$700
3- Bi-weekly Systems Check:	\$450
4- Backwash Cleaning and Inspection:	\$480
5- Filter System Disk Replacement:	\$500
6- Storage Basin Cleaning:	<u>\$670</u>
Total OM&R costs:	\$9,085

SECTION 3– COST EVALUATION & RECOMMENDATIONS

3.1 COST EVALUATION

The current cost USU-CEU incurs for irrigation per acre, based off the Durrant Lawn Model, is found in Table 9. Using the information from Table 6 the average irrigation cost per acres is found to be \$466.63/month. The annual cost for campus irrigation is estimated at \$64,395 (\$467.63 x 23 acres x 6 months).

TABLE 6: Durrant Lawn Demand				
Month	Gallons (metered value)	Gallons per Acre (Durrant Lawn ≈ 7.64 acres)	Durrant Lawn Irrigation Cost	Irrigation Costs per Acre
April, 2011	281,500	36,846	\$410.49	\$53.73
May, 2011	716,200	93,743	\$1,729.54	\$226.38
June, 2011	1,454,800	190,419	\$3,938.03	\$515.45
July, 2011	1,623,600	212,513	\$4,442.02	\$581.42
August, 2011	1,295,600	169,581	\$3,461.21	\$453.04
September, 2011	1,641,200	214,817	\$4,490.17	\$587.72
October, 2011	1,066,900	139,647	\$2,918.94	\$382.06

The break-even point for the recommended alternative at both of the proposed site locations with varying storage and canal tie-in options are found in Table 7.

Even though there are two main alternatives, there are a few optional designs for each alternative. Cost estimates for each alternative can be found in Appendix A. The alternatives evaluated are listed below:

Alternative 1-1: Basin at Site 1 with 60 minute Storage (20x20x15ft) Open Canal

Alternative 2-1: Basin at Site 2 with 60 minute Storage (20x20x8ft) Open Canal

Alternative 1-2: Basin at Site 1 with 20 minute Storage (10x10x15ft) Open Canal

Alternative 1-3: Basin at Site 1 with 60 minute Storage (20x20x15ft) Piped Canal

Alternative 2-3: Basin at Site 2 with 60 minute Storage (20x20x15ft) Piped Canal

**SECTION 3– COST EVALUATION &
RECOMMENDATIONS**

TABLE 10: Proposed Secondary Break-Even Point

Alternative Site Option	Estimated Cost	Current Irrigation Costs (\$/year)	O&M Costs (\$/year)	Break-Even Point (years)
Alt. 1-1(OC Canal) 60 min Storage	\$684,497.14	\$64,395	\$9,085	12.4
Alt. 2-1(OC Canal) 60 min Storage	\$599,556.89	\$64,395	\$9,085	10.8
Alt. 1-2(OC Canal) 20 min Storage	\$638,619.80	\$64,395	\$9,085	11.5
Alt. 1-3(Piped Canal) 60 min Storage	\$697,745.14	\$64,395	\$9,085	12.6
Alt. 2-3(Piped Canal) 60 min Storage	\$623,889.45	\$64,395	\$9,085	11.3

**SECTION 3– COST EVALUATION &
RECOMMENDATIONS**

3.2 RECOMMENDATIONS

As shown in Table 10, the preferred alternative will take 12.4 years to enjoy the cost benefit of converting to a secondary irrigation system. It is recommended that the project start construction during the fall of 2013, after the irrigation season has been completed. The project should be able to be completed before the next watering season in 2014. For final design, an hourly meter reading investigation should be conducted during irrigating hours for 2 full cycles during peak use to establish final design on the pump system and overall irrigation system. Depending on funding capabilities, the project can be phased. If the project is phased, the construction of the storage basin, filter system, and pump system would need to be included in the initial phase of the project and water shares could be purchased incrementally as needed. The minimum flow that a single 20 horsepower VFD pump can pump at is 50 gpm. 50 gpm is approximately 10 rotary sprinkler heads operating at the same time. If USU-CEU decides to move forward with this project before the canal is piped, the schematic of the proposed alternatives can be adjusted to receive water from a piped source by adding a valve into a new 6-inch pipe and eliminate the canal gate, diversion channel, and traveling screen. The flow into the storage basin from the piped canal would then be regulated with elevation sensors in the storage basin to match the outflow demand. Detailed cost estimates for retro-fitting both alternatives to receive water from a piped canal system can be found in Appendix A, Alternative 1-3 and 2-3.

Please Note: This is a selection of the most pertinent information taken from the Irrigation Master Plan Study. Please refer to the original document to view the entirety of the report, as well as the supporting appendices.

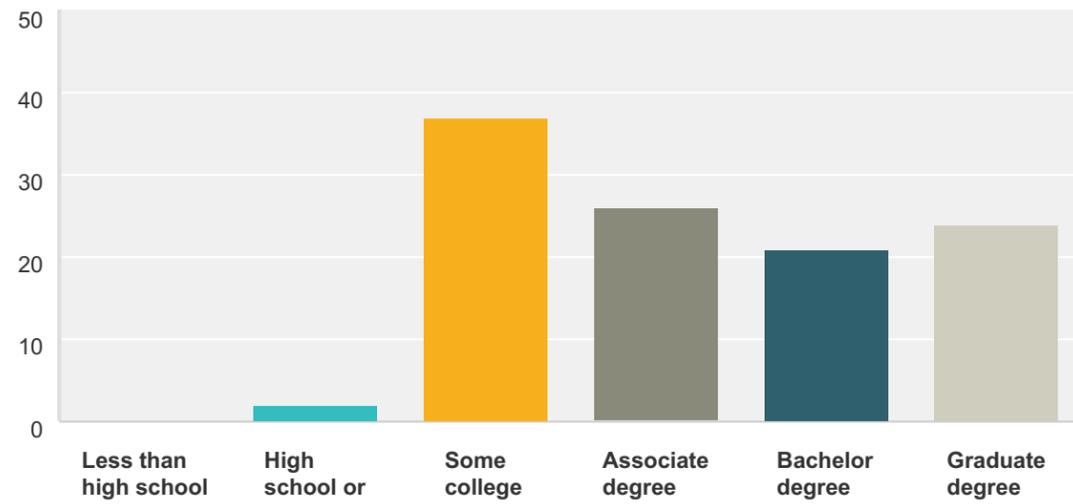
SURVEY RESULTS

A summary of the results from the *Survey Monkey* online survey are shown below. The “word clouds” for the open-ended questions were created by the Survey Monkey software. The words shown are the most occurring in the respondents’ answers. Full transcripts of each answer are available upon request. Contact **USU Eastern’s Chancellor’s Office at 435.613.5664** or **CRSA at 801.355.5915**.

appendix D

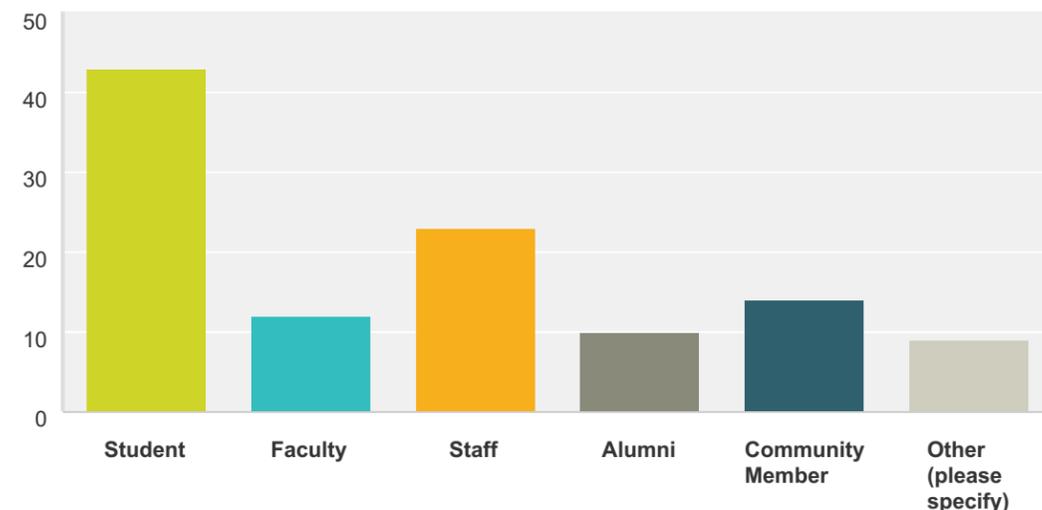
Q2 What is your level of education?

Answered: 110 Skipped: 1



Q3 What is your affiliation with USU Eastern?

Answered: 111 Skipped: 0



Q4

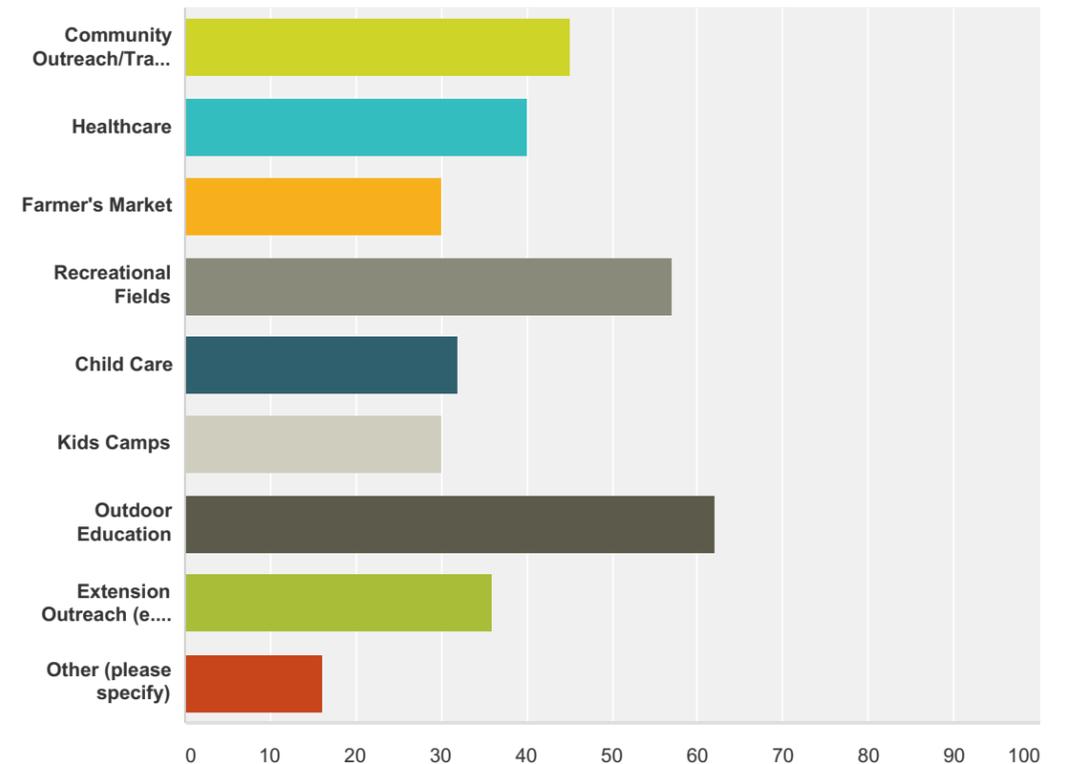
What academic programs, not already available, should be offered at USU Eastern Price Campus in order to meet your needs or the needs of the community?

Answered: 85 Skipped: 26



Q5 What new programs or facilities should be introduced at USU Eastern Price to enhance your use and experience of the campus? Check all that apply

Answered: 95 Skipped: 16

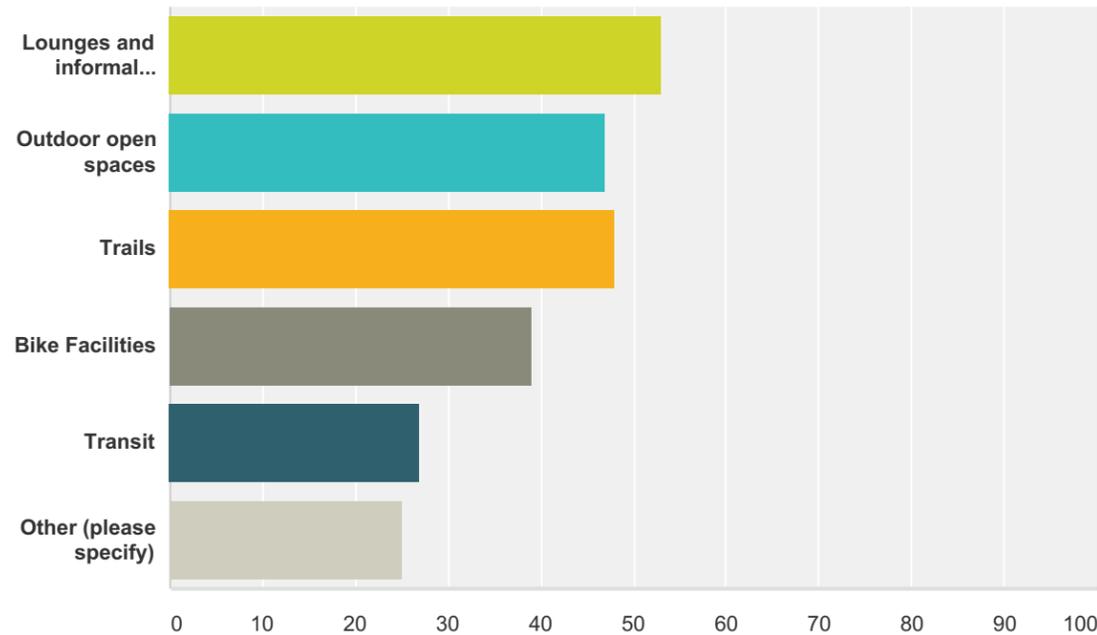


Q5 cont'd

Running Summer **Child Care Center** Start
Community Track Internships

Q6 What additional amenities are needed on the campus? Check all that apply

Answered: 93 Skipped: 18



Center Facilities **Students** Field **Parking**
Library **Running Track**

Q7

Are there other aspects of the campus that if changed would improve your experience at **USU Eastern**?

Answered: 56 Skipped: 55

Facilities Training **Food** Non-traditional **Campus**
Local **Student** Cafeteria **Community** SUU
Focus Parking **Library**

Q8

What are the greatest challenges or obstacles for you in pursuing a degree in higher education?

Answered: 72 Skipped: 39

Math Program **Class Availability** Not Knowing
Money Pursue **Cost** Balancing **Offered**
Schedule **Campus** **Paying**

Q9

What are your thoughts on the concept plan? What works? What does not?

Answered: 75 Skipped: 36

Development Emphasis **Love** Getting Rid
Soccer Fields Understand **Campus**
Expand **Students** Appeal **Looks** Sense
Parking Renovation **Community** **USU Eastern**

APPLICATION OF SURVEY RESULTS TO MASTER PLAN

Q1. Contact Information

This was more demographic and informational data and was used to determine the winner of the iPad, through a draw.

Q2. What is your level of education?

Most of the respondents had some college education or more. This means that the respondents were a group of people who were familiar with [a] college and how it operates.

Q3. What is your affiliation with USU Eastern?

Students and staff were the greatest group of respondents to this question. Students are the greatest users of campus, and their opinions matter. They also understand the daily experiences the physical layout of the campus offer.

Q4. What academic programs, not already available, should be offered at USU Eastern Price Campus in order to meet your needs, or the needs of the Community?

The programs that respondents suggested be introduced are those that can be housed in standard classroom and laboratory spaces. Other spaces have been made available on campus for programs that may need an outdoor space or fields.

Q5. What new programs or facilities should be introduced at USU Eastern, Price, to enhance your use and experience of the campus?

Outdoor education and recreational fields stood out as the most important. Different types and scales of open space have been provided in the Master Plan to encourage multiple and flexible use of outdoor spaces. New buildings that have been proposed to meet the growth requirements of the campus should be able to house some of the other programs that were mentioned such as the child care center and extension/outreach services.

Q6. What additional amenities are needed on the campus?

Lounges and informal gathering spaces was mentioned as being an important requirement for the campus users. This is an important need for campus users for most of the cold winter months when school is in session and outdoor gathering spaces are not ideal. It is expected that future buildings on campus be designed to provide more student spaces and informal gathering areas. As mentioned in the Architectural Design Guidelines section, the buildings should also offer good indoor-outdoor visual connections that will create a 'continuum' of space for campus users.

Parking availability and accessibility also came up as important for respondents to this question. Adequate parking has been proposed for the campus with the addition of a

structured parking area to the southeast corner of campus. With more pleasant walks and ample pedestrian amenities, the need to park at the front door of buildings will be eliminated. Multi-modal travel is also encouraged and facilities are proposed in the Master Plan to make this possible.

Q7. Are there other aspects of the campus that if changed would improve your experience at USU Eastern?

A number of respondents complained about the Student Center serving as an administration building and not fully meeting its purpose of being a true student center. An expansion to the student center has been proposed as well as a designated administration building and a gateway building. These would free up spaces in the current student center and consolidate administrative services currently split between various facilities on campus. Respondents also talked about the need for more recreation and 'hang out' spaces since these were lacking and current halls of residences were getting run down.

Q8. What are the greatest challenges or obstacles for you in pursuing a degree in higher education?

Most of the answers to this question were not issues that had a direct impact on the physical environment. They were more socioeconomic and academic in nature.

Q9. What are your thoughts on the concept plan? What works? What does not?



A draft of the concept layout for the full build-out of the campus was placed on the survey website to solicit responses. This was updated for the final Plan.

Respondents were generally positive about the concept and called for more open spaces which was later addressed.

They also called for more flexibility of space (both indoor and out) and the inclusion of activities on campus to encourage more social interaction.



UTAH STATE FACILITIES CENTRAL HEATING & COOLING DISTRIBUTION

Placeholder for document prepared by USU

appendix E



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ARCHITECTURE
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649 E SOUTH TEMPLE
SALT LAKE CITY, UT 84102
801.355.5915
www.crsa-us.com