CAMPUS MASTER PLAN
Utah State University
Brigham City Campus
USU Brigham City Campus Master Plan

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1. BACKGROUND DOCUMENTATION

BRIGHAM CITY CAMPUS VISION

The Brigham City Campus of Utah State University has, since the early 1990’s, primarily served students during evening hours. Drawing students from Box Elder County, Northern Weber County, and also Cache County, the campus has acted primarily like a community college offering a local option for completing coursework. While USU Brigham City will continue to provide classes under this model for many years to come, it is envisioned that additional options will be made available to students. More students are seeking courses at USU Brigham City as part of their course work. As this demand grows, and population growth pushes north from the Wasatch front, and as degree offerings grow, it is anticipated that more daytime classes will be added to the existing complement of evening courses.

As the campus is able to provide classes at multiple times of day, the overall square foot to full time student ratio, which is commonly used to measure space allocation on campuses, will remain low. As the campus grows and matures however, additional services will be made available to students, such as a student center that will also be a venue for community events. This will cause the ratio to change over time.

DISTANCE EDUCATION

Distance education is another factor that affects space allocation and overall vision at the USU Brigham City Campus. Classes taught via broadcast are available at all USU Campuses across the state. Thus, a classroom of 4 to 6 students is common at the Brigham City campus, and there are approximately 15 of these classrooms, with another 10 larger classrooms. Five to ten more classrooms are anticipated in the near future. If this trend continues, non traditional classroom spaces may be needed as well as larger class rooms for traditional classes. As the campus continues to deliver classes in broadcast, online, and traditional formats, class sizes will need to be re-evaluated.

DEMOGRAPHICS

The age of the average student at the USU Brigham City Campus has been dropping over the past few years. The current average age is 31, down from 35 a few years ago. The student is primarily taking classes between 5pm and 11pm. One third of the students at the campus are in the Brigham City area. One third travel from the north, the other third travel from south of campus to take courses. It is envisioned that this demographic will change in the coming years. The Governor’s Office of Planning & Budget projects heavy increases in population

Existing USU Brigham City Regional Campus Building
In northern Utah, The USU Brigham City Campus will likely absorb much of the educational needs for this growth. New students at the campus will be a mix of non-traditional students as well as traditional students who are unable to obtain degrees off the main USU campus. This mix will push average age of campus students down over the years and is reflected in the overall campus vision to provide more services for on-campus students. This transition will take place as more degree offerings are added, and as more daytime classes are offered. It is the intent of the University that evening classes will be offered for non-traditional students as well as traditional students who are unable to obtain degrees off the main USU campus. This transition will take place as more degree offerings are added, and as more daytime classes are offered.

Faculty History
Utah State University began offering classes in Brigham City in 1983. At this time rooms were rented in a small home. This condition continued until 1986 when the campus began utilizing space at a local school. In 1991 the campus was moved to its current location in the strip mall. The campus has expanded at this location over the years as follows:

- 1991 Initial Space 4,000 sf In Strip Mall
- 1996 Expansion 18,000 sf
- 2000 Expansion to 22,000 sf Into Fred Meyer Bldg.
- 2004 Expansion 38,000 sf
- 2007 Expansion 44,000 sf
- 2008 Expansion 50,000 sf Added Faculty Bldg.

Although about 40% of the Fred Meyer building has been developed, it is anticipated that this space will be completely used within approximately five years. The facility is currently near capacity and is at parking capacity. With the BATC next door also growing, space will be limited at the current site. Adjacent land for expansion is limited by the presence of the property. There is currently a book store at the site, and common study space. However, there are no student services such as a student center.

Existing Inventory
The existing facility at the strip mall provides a mix of classroom and instructional spaces. Approximately 25 of the classrooms on campus are distance learning rooms. Many of these are small rooms which provide small groups of students access to a course being taught at a different location. Larger classrooms often have a teacher on site. The main building, in addition to classroom, has a book store and general study space. There is also a faculty building in the adjacent strip mall.

New Site Description
In 2003 the Kmart site on Main Street was received as a gift by Utah State University which includes almost 90,000 square feet on 8 acres of land. There are 50 to 60 acres of available land adjacent to this facility to the north and east. This property is generally known as the “Indian School.” Originally it was used by the military in World War II as a hospital. Following this use it was used as the Intermountain Indian School. The federal government turned over use of the site for public use and is now privately owned. Most of the original structures are still on the site with little recent development. Although the structures will need to be torn down, the site will essentially be a blank slate for campus growth. This site has some natural slope, up, from south to north. However, as the site was previously developed the land is flat enough as to make slope a non-issue for conceptual planning purposes. There are City maintained streets at and through the site and access from UDOT controlled Main Street. USU purchased the majority of the Indian School property in 2011.

New Site Zoning
Brigham City zoning for the proposed site is mixed. The frontage is zoned commercial conditional while the bulk of the site is residential with a specialty planning overlay. Although the university could move forward with its plans without City zoning in place to match, it is suggested that the City modify existing zoning to reflect plans, which the City is supportive of, if USU purchases the land. An alternative planning district overlay is a potential solution, as is a rezone. Current zoning allows for seven story construction throughout the site.

FTE and Square Foot Ratios
Student enrollment history is shown below:

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<tr>
<th>Year</th>
<th>Head count</th>
<th>FTE</th>
</tr>
</thead>
<tbody>
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<td>Fall 1997</td>
<td>205</td>
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<tr>
<td>Fall 1998</td>
<td>253</td>
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<td>Fall 1999</td>
<td>299</td>
<td>114</td>
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<td>Fall 2000</td>
<td>456</td>
<td>203</td>
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<td>705</td>
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<tr>
<td>Fall 2002</td>
<td>837</td>
<td></td>
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<tr>
<td>Fall 2003</td>
<td>958</td>
<td></td>
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<tr>
<td>Fall 2004</td>
<td>1112</td>
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<tr>
<td>Fall 2005</td>
<td>857</td>
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<tr>
<td>Fall 2006</td>
<td>1043</td>
<td>457</td>
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<td>Fall 2007</td>
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<tr>
<td>Fall 2008</td>
<td>1012</td>
<td>511</td>
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</table>

Source: Brigham City Zoning map

Projected Enrollment Growth

USU Brigham City Campus Master Plan

Brigham City Enrollments

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Source: Brigham City Zoning map

FTE and Square Foot Ratios

Student enrollment history is shown below:
Although some gaps exist, a trend line can be plotted (see previous page) for both student head count and full time equivalent counts (FTE). Understanding how many students will be on campus is the first step in the campus planning exercise. Potential enrollment data will help us determine spatial needs for facilities, parking, and open space. At the USU Brigham City campus, as there are many non-traditional students taking a partial load of credits, the headcount is much higher than the corresponding full time equivalent. The ratio has been dropping over the years but headcount remains approximately double FTE.

The trend line chart that precedes, extends the enrollment data to the 50 and 100 year time frame. In 2060 it is projected that there will be approximately 2100 FTE students on campus. This number grows to 3900 FTE students in 2100. This analysis does not distinguish between traditional vs non-traditional services. However, it is assumed that the number of traditional students taking a full load of credits will grow. The following chart indicates that headcount will grow to over 8000 in 2100.

In reality it is expected that the headcount trend line will grow at a slower rate to more closely match the main USU campus ratios. However, no revisions to the headcount data have been undertaken at this time. Rather, the study counts on FTE for space planning purposes. Currently there are 511 FTE students on campus utilizing 50,000 SF of space. This results in a space utilization of 97 SF per student. This is a very efficient use of space. The appendices include a chart indicating the state wide allocations for various campuses. 97 SF per student is among the lowest and is consistent with a non-traditional student commuter campus.

Additionally, this low number can be attributed to the sharing of space between daytime and evening courses. As the vision of the campus is to grow into a full regional campus with many student resources such as a student center, the square foot ratio will change. More square feet per student will be the result of constructing more services on campus. The target number of square feet per student has been set at 220 for this study.

GREEN SPACE PLANNING

Open space has been calculated using a square foot per student methodology, similar to the facility analysis. 100 square feet per student is provided in the more services scenario in the 50 year horizon, and 250 SF per student in the 100 year horizon. Fewer square feet are provided in the fewer services option, 50 and 100 respectively for the 50 and 100 year horizon. As more parking is calculated in the fewer services options, less green/open space is available.

PARKING

There are approximately 515 parking stalls at the current strip mall facility which are shared by the adjacent BATC and the other tenants in the strip mall such as the driver license division. However, the adjacent uses, including BATC, usually use the stalls during the day. USU utilized only a portion of the stalls during the day; however these stalls are nearly 90% occupied in evening hours. Approximately 140 stalls will be lost when the lease along the north side of the parking lot is not renewed. As daytime classes are added, the ability to serve the campus with parking will diminish. The parking availability will worsen as more students demand classes in daytime hours.

A shuttle (operating limited evening service) is provided by Utah State Brigham City for students travelling from Logan to Brigham City, but does not significantly reduce parking needs.

For the purposes of planning, the following parking ratios have been explored: In the 50 year planning horizon, one stall per student has been chosen in the fewer services option, matching current ratios. If more services are provided and/or mass transit has increased, a ratio of 0.5 stalls per student has been chosen. This lower ratio has been chosen as typically campuses with fewer services are more likely to be commuter campuses. Included in this equation is a consideration for on campus housing, although no structures have been designated as housing on the campus plans and would likely be provided by local developers on private land. It is also assumed that more transit will be available in the 50 to 100 year time horizons.

In reality, this number can be attributed to the sharing of space between daytime and evening courses. As the vision of the campus is to grow into a full regional campus with many student resources such as a student center, the square foot ratio will change. More square feet per student will be the result of constructing more services on campus. The target number of square feet per student has been set at 220 for this study.

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2. CAMPUS PROGRAMMING PLAN

SPACE ALLOCATION STUDY

The planning team utilized the 2110 Campus Phasing Scenario of 1,100,000 gross square feet (GSF) of built-out space to accommodate the growth and development of Utah State University’s regional campus. Planning exercises were utilized as a means to consider options for distributing square footage by building type, including student services space (library, administration, facilities/grounds, central plant, etc.) within the campus bounds over the first 100-years of campus use.

The development of campus organizational diagrams, illustrated in Chapter 3, considered the location and purpose of the first campus buildings and the subsequent phases of construction to craft a cohesive campus plan. The planning team used four primary planning drivers to help organize and craft schemes, including the desire to:

- Strengthen the University’s role in the community,
- Establish a connected campus,
- Create a pedestrian friendly campus, and
- Preserve the natural environment and USU’s heritage.

In order to accurately predict how and when new buildings will be needed on campus due to enrollment growth, the planning team reviewed existing and projected future conditions. As the USU Brigham City Campus grows, space has been allocation at 220 GSF per student, currently in alignment with UHE 2011 space standards. In addition, by utilizing enrollment trends, crafting projections of faculty and staff, and parking requirements the planning team was able to illustrate, during the three major phases of campus development, when and how new facilities and site development may take place.
During the phase of development that will accommodate student enrollment growth from 2,400 students to approximately 4,000 to 5,500 students at certain phases of its development, the campus plan will accommodate the development of freestanding facilities to accommodate library, student union and student recreation. Phase three campus development will accommodate student enrollment growth from 3,000 to approximately 4,000 to 5,500 students and allow for the steady transition away from heavy use of existing off-campus facilities. The campus plan will accommodate an additional 450,000 to 600,000 GSF of new facilities which will define the campuses eastward and northward growth. During this phase student support space will be developed, as will access to the surrounding community. For students who no longer have access to the surrounding community, the campus plan will accommodate the development of freestanding facilities to accommodate library, student union and student recreation. As the campus grows precincts may develop to include the collaboration between 300 and 500 students with general use classrooms, faculty offices, student support space, recreation, athletics, and non-academic space on the USU campus. In light of growth academic and non-academic space needed to support the academic mission of the USU BC campus was helpful to verify distribution of academic and non-academic space on the USU BC campus at build-out.

<table>
<thead>
<tr>
<th>Space Use Area</th>
<th>Space Use Area Percentage</th>
<th>ASF/FTE</th>
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</thead>
<tbody>
<tr>
<td>General Academic Instruction</td>
<td>10%</td>
<td>55,000</td>
</tr>
<tr>
<td>Technical Instruction</td>
<td>7%</td>
<td>32,000</td>
</tr>
<tr>
<td>General Instruction</td>
<td>2%</td>
<td>60,000</td>
</tr>
<tr>
<td>Office</td>
<td>20%</td>
<td>150,000</td>
</tr>
<tr>
<td>Special Use</td>
<td>4%</td>
<td>40,000</td>
</tr>
<tr>
<td>Clinic, Demonstration</td>
<td>14%</td>
<td>154,000</td>
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<tr>
<td>Accountancy, Education, Exam Facility, Maintenance, Meeting Room</td>
<td>3%</td>
<td>15,000</td>
</tr>
<tr>
<td>Support</td>
<td>5%</td>
<td>55,000</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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</tr>
</tbody>
</table>

General Programming of Required Uses

The planning team utilized Utah State University’s Higher Education (SUH) space standards to establish a build-out of academic and non-academic space on the USU BC campus. A detailed development schedule was used to ensure efficient space utilization on other similar regional academic campuses and to verify general programming requirements. The following chart illustrates areas of growth, the purpose of the academic program and the accommodation of on-demand academic needs needed to support the academic mission of the USU BC campus at 1,100,000 GSF.

Higher Education (SUH) space standards to establish a build-out of academic and non-academic space on the USU BC campus. A detailed development schedule was used to ensure efficient space utilization on other similar regional academic campuses and to verify general programming requirements. The following chart illustrates areas of growth, the purpose of the academic program and the accommodation of on-demand academic needs needed to support the academic mission of the USU BC campus at 1,100,000 GSF.

The chart illustrates a standard space allocation, campus development must consider the need to be responsive to changing programmatic requirements to specific programmatic areas to serve student use, academic growth and the development of utility systems. The following areas require specific attention to be paid to campus growth and development milestones which will serve as leading indicators to planning for their accounts.

Academic Instruction and Administrative Space

USU defines its Innovation Campus(es) as a place that provides an environment with facilities, services and technology, as well as programs and expertise that stimulate and sustain the growth of research and technology-based enterprises. A USU Innovation Campus is planned for the BC Campus. The Innovation Campus at USU BC may be considered a campus within a campus. While strong linkages to the campus’ central mission exist, the Innovation Campus will have a strong individual identity and will be considered a campus within the bounds of the Institution’s Innovative Campus goals. It will be a collaborative multi-departmental use building to be developed based on demand. Building size and configuration must accommodate both general and specific use. The buildings are designed in easily accessible areas, adjacent to important service points. Building massing to accommodate both general and specific use. The buildings are designed to provide an environment with facilities, services and technology, as well as programs and expertise that stimulate and sustain the growth of research and technology-based enterprises. A USU Innovation Campus is planned for the BC Campus.
Campus Utility Systems

The construction of the first building on campus will initiate a discussion regarding the contribution each of the first few buildings will make in supporting a centralized or decentralized utility system. This document reviews a myriad of issues that need to be discussed to craft a long-term utility plan. The illustrative campus master planning diagrams were developed with the potential of a central system in mind, thus pedestrian circulation systems should be planned and designed to serve as tunnel locations.

Surface and Structured Parking

The development of parking on the USU Brigham City Campus will initially take advantage of existing parking facilities associated with the existing Kmart facility. As the campus grows, parking lots initially developed to provide easily accessible parking adjacent to buildings may become future building sites. As the campus transitions between Phase Two and Three there will come a time when structured parking on campus will be warranted, both due to the heightened value on both open space and buildable real estate. This campus master plan places structured parking centralized on the west side of campus, immediately north of the first academic building.

ENGINEERING ANALYSIS

The consulting team for the master planning process included civil, mechanical, electrical, and transportation engineers. Their input was critical in informing the decisions the planning and design team made. Detailed memoranda and maps can be found in Appendix D.

Mechanical Analysis

The total campus elevation delta is approximately 55-feet and the gradient is gradual. The central plant may therefore be located anywhere on campus without imposing an excessive load on any building. The campus high point is on the north-east corner, with the low point being on the south-west corner. Locating the central plant at the high or low point offers a slight advantage with steam distribution. The proposed concept does not facilitate an optimum central plant location from an elevation perspective. The plant will be located on the southeast corner of the site to facilitate overall campus vision and circulation. The tunnel distribution loop will enlcoke the campus as depicted in the next page.

CIVIL ANALYSIS

Overview

The following sections outline the completed utility analysis for the Utah State University Brigham City Campus at the 100 year planning horizon. The build-out size, number of students, open space areas, etc is based upon the CRSA Campus Plan Feasibility Study for the Brigham City Campus. The scope of this study is to analyze water, sewer, storm drain, gas and, and secondary irrigation and natural infrastructure.

Utility Inventory

GS data was collected from the Brigham City GIS department for water, sewer, storm drain, gas, and communication lines. The information was compiled onto individual utility maps for each water, sewer, storm drain, and natural infrastructure.

Existing Sewer Elevation Data

The rim elevation of the sewer manholes within the project boundary were obtained from the GS data files provided by the Brigham City GIS department. The vertical depth from the rim to the flow line of trough in the base of the sewer manhole was obtained by physically removing the sewer manhole lid and measuring the depth to the flow line.

Existing Utility Analysis

Water: The existing culinary water lines within the study area range from 6-inches to 12-inches in diameter. The material of each water line is unknown. There are a number of water valves and fire hydrants within the study area as shown on the map. The capacity of the existing water system was analyzed by calculating the indoor and outdoor water demands at the 100 year build out scenario. The total full time equivalent number of students for the 100 year planning horizon was calculated, during the Feasibility Study that preceded this Master Plan. The total full time equivalent (FTE) students from that report structured parking on a campus should conform to the overall architectural language and be easily accessible by campus users.
was determined to be about 3,900. For planning purposes it is estimated that 30% of those students would live on campus at the 100 year planning horizon. The total peak demand and peak instantaneous water demand for indoor and outdoor use were then calculated utilizing the recommended values from section R309-510-7 of the State of Utah Administrative Rules and the total estimated FTE for the campus. State of Utah Administrative rules require that a water system be modeled for the peak demand plus fire flow scenario and the peak instantaneous demand scenario.

Understanding that the expected building types would be type II B construction, two stories tall, and approximately 40,000 sf per building, thus according to the International Fire Code (IFC), a 4,250 gallons per minute (gpm) fire demand is required. The peak demand plus fire flow and the peak instantaneous demand were given to the Brigham City Engineering department for analysis in their water model. The demands were modeled for both scenarios and the following recommendations were made by Brett Jones, P.E. the Brigham City Engineer:

1. In general the distribution system in the area is very healthy and the proposed peak instantaneous flows you sent should not be a problem.
2. The fire flow demand of 4,250 gpm was able to be serviced by the system but in most cases with undesirable velocities. Velocities of 13-24 feet per second were observed. For this reason, we recommend that campus buildings be fitted with fire sprinkler systems as dictated by the building code and the local Brigham City fire authority.
3. We recommend that the 8” main in Fishburn Drive be extended and connected to the water main in 200 East as the roadway is constructed in this area. We also recommend that the 8” and 10” mains that currently service the old Kmart property be looped into the water system to the east or the north to provide adequate looping in the future.
4. The water mains will likely require replacement in the 100 year build-out timeframe. When replaced, we recommend replacement of the existing diameter unless the existing diameter is less than 8”. These mains should be replaced at 8” to comply with existing City Standards.

Sewer

The existing sewer system within the study area consists of 8-inch sewer mains (see Sewer Map, Appendix A). All major roadways within the study area contain an 8-inch sewer main, with depths from the manhole lids of ranging from 8.40 ft to 10.75 ft deep. All the sewer mains within the study area flow to the southwest corner of the project at the corner of 1000 South Main Street. The existing sewer system was analyzed considering the 100 year planning horizon for the 3,900 FTE students. The average water demand of 400 gallons per day (gpd) minus a 15% depletion rate with a multiplier of three applied yields the design sewer flow per equivalent residential connection (ERC).

The wastewater calculations illustrate the method used to determine the design sewer flow for the study area. The calculations also considered sewer inflow from connections upstream of the study area. It is estimated that 100 ERC’s are connected upstream of the mainline at 200 East 850 South and 80 ERC’s are contributing flow upstream of 450 East 100 South. The estimated ERC’s are based upon a visual aerial survey analysis. The wastewater flow from areas upstream of the study area were applied at the applicable manholes, with one third of the study area projected wastewater flow being applied at 450 East 950 South and the other third being applied at 450 East 1000 South. The remaining third of the study area projected wastewater flow is assumed to flow to the sewer main along Main Street. The wastewater flow values, invert elevations, and lengths of pipe were inserted into AutoCAD Storm and Sanitary Analysis software.

The results of the analysis are found in Appendix C of this report. The following are the summary and recommendation from the analysis of the sewer system:

1. All existing pipes have acceptable velocities (less than 6 feet per second) and the pipes had adequate capacity (Peak Flow Depth/Total Flow Depth ratio less than 0.49).
2. The majority of the sewer mains have a minimum depth at the roadway of 8.4 feet providing adequate depth for sewer service connection to the proposed buildings.
3. It is recommended that the sewer main extension in Fähri Dual be an 8-inch main and that the main connect to the sewer main in 200 East. It may be advantageous to divert wastewater flow from areas north of the study area west into the Fähri Dual sewer system. This will increase the available flow capacity of the sewer mains in 200 East and 1000 South Street.

4. It is recommended that water efficient fixtures be utilized within the proposed buildings to decrease the water demand thus reducing the total amount of storm water detention/retention required.

5. There may be a conflict with the existing 30 and 27 inch storm drain pipes and the proposed first building. It is recommended that the building layout avoid interrupting this main storm sewer line.

6. Additional storm drain stubs may be required for development near 900 South, 400 East and 450 East if the Campus elects to release the allowable discharge from each site to the City storm drain system.

Secondary Irrigation

This section explores the feasibility of providing the secondary water demands within the study area from the Pine View Canal. Specifically the total number of required shares, length of main line required from canal to study area and the average cost of water shares are analyzed in this section. Directly southeast of the study area is the Pine View Canal. The canal originates from the Pine View Reservoir. Currently the canal does not have excess shares to allocate to a secondary irrigation project according to Terrell Grimsley of the Weber/Box Elder Conservancy District. The shares would then be physically connected to the parcel being irrigated. The yearly assessments would be due for the water shares. The detailed calculations in Appendix B illustrate the total amount of water shares required for the 100 year planning horizon. Based upon the “more services” option of the previous Campus Plan Feasibility Study 17.91 acres of green space will be provided at build out. According to the State of Utah Division of Water Rights the irrigation duty rate for Brigham City is 4 acre-feet per acre. At the 100 year planning horizon the campus would require 71.64 acre-feet of irrigation water or 72 shares in the Pine View Canal Company. This represents an approximate investment of $89,550 in water shares purchases and the assessment fees for all the shares on an annual basis if option one is selected. If option two is selected the assessment fees for 72 shares would need to be paid on an annual basis. This report doesn’t include a construction cost estimate or feasibility study, but a preliminary layout of the distribution pipe from the canal to the Campus requires 1,000 feet of pipe. The size of the pipe is unknown at this time.
Natural Gas

Questar Gas Company provides natural gas to the study area as shown on the Gas Map (Appendix A). A four inch gas line exists along the exterior of the USU Brigham City Campus area. There are gaps in existing gas line coverage along 400 East Street, 400 East Street, 900 South Street, 150 South Street, and the area between 200 East and Main Street. Many of these roadways will be reconfigured according to the Site Plan/Phasing Plan resulting in rerouting of the existing gas lines. The following recommendations are made:

1. Overall the existing gas lines have adequate coverage for the proposed campus at the 100 year build out.
2. Coordinate with Questar Gas during proposed construction of the Utah State University Brigham City Campus to extend, reroute, and construct gas lines as needed to service the proposed campus.

ELECTRICAL ANALYSIS

Central Plant Distribution

Power: Using the central plant concept for owner distribution of power and communications is feasible for the USU Brigham City campus. The planned central plant location at the south-east corner of campus is not ideal, but can be utilized. The proposed concept would be to take delivery from Brigham City Power at 12470V using a single, primary meter at or near the central plant. The owner would then install primary distribution equipment at that location. The lines would then be loop fed throughout the campus as development of the campus progresses. The initial phasing would be intrusive to existing road/infrastructure as new lines ideally would need to be buried for the incoming utility delivery, and for outgoing distribution from the central plant location to the first academic building.

Phase 2 work will require extensive coordination with Brigham City Power and Qwest. An existing main overhead line is routed N/S along 200 East to 1000 S and then feeds back up around 600E. These lines are tapped to distribute power to customers to the south, and east of campus. There is also a connection from the main line to an underground line that feeds customers to the east. Alternate distribution is feasible, but utility coordination will be required so that main lines are not re-routed through future building footprints.

The anticipated campus demand for each phase is as follows:

- Phase 1: 1.75 Megawatts
- Phase 2: 2.9 Megawatts (total)
- Phase 3: 3.75 Megawatts (total)

Demands given are total, cumulative, anticipated demand at the end of each phase's construction. Demands have been calculated using USU’s main Logan campus as a model taking the campus’s existing demand to determine a watt/square foot average demand, giving an adjustment factor to allow for a more dense campus and measurement discrepancies, and then extrapolating that to the proposed campus masterplan for each phase. “Demand” represents actual, anticipated draw on the utility system, but does not correspond to calculated loads based on the National Electrical Code which would indicate higher requirements.

Communications: It is anticipated that the campus will have a central data center at some point which may be near, or part of, the central plant. The concept for owner distribution of communications is similar to that of power—and new communications lines would be routed along the same path as the power infrastructure. Qwest and Utopia lines are both near the campus. Both utilities are available from the north and could be routed generally along the same path as the incoming power lines.

However, an alternate route coming in from Main Street along 1000 W is also worth consideration as it is possible that distribution throughout the campus might be routed so that phase 2 may be from the Academic Building while infrastructure is being built.

Existing utility lines and customers:

a. Many of the existing lines are routed overhead. If the utility system were to be maintained, some of the lines could be relocated underground fairly easily when tunnels were constructed.

b. As was previously mentioned, some customers are served north, south, and east of campus via lines that will be affected by the campus construction. For either scenario—central plant/owner distribution or utility distribution, the utility infrastructure around the campus will need to be adapted to re-serve these customers.
The purpose of the transportation analysis is to provide background and future transportation information in regards to the Utah State University (USU) Brigham City Regional Campus. Under existing conditions, the proposed Utah State University (USU) Brigham City Campus site is composed of a quasi-grid roadway system. As the campus expands, many of the existing roadway will be removed and internal circulation will emphasize pedestrians and bicycles.

Traffic Volumes

Daily traffic volumes were collected from June 21, 2011 to June 23, 2011 on 800 South, 1000 South, and 200 East. The following shows the average daily traffic (ADT) on those respective roadways:

- 800 South: 690 ADT
- 1000 South: 1,110 ADT
- 200 East: 730 ADT

Main Street has an ADT of approximately 17,600.

The historic traffic growth on Main Street near the campus site, based on five years of Utah Department of Transportation (UDOT) data (2005-2009), is approximately 2%. In other words, the traffic on Main Street has increased by about 1,330 ADT since 2005.

Main Street Intersection Spacing

UDOT has classified Main Street (SR-13) as a Regional Urban roadway, also known as a Category 6 roadway. The State Highway Access Management Standards state that Category 6 roadways should meet the following spacing requirements:
Traffic Calming
Internal roadway speeds should be minimized to provide for the comfort of a college campus. Recommended traffic calming measures include bulb-outs, speed tables, and curbsides. Crossings for pedestrians should be accommodated through raised medians. For roadways not expected to carry the bulk of traffic, such as 500 East, lane widths should be reduced and should be kept in the 10-foot range.

Traffic

Traffic Calming

Roadway Design
Campus roadway sizes were determined by phase based on capacity and projected ADT. Given the environment of the USU Brigham City campus, the following roadway capacities are expected:

- Two-lane 10,500 ADT
- Three-lane 11,500 ADT
- Four-lane 22,500 ADT

Using the above standards, all campus roadways will function at a projected Level of Service (LOS) C or better with a two-lane configuration. As the campus moves toward its 100-year build-out, the three main entrances to campus, Fishburn, 990 South, and 1000 South, will experience an increase in traffic, but should remain under the 80% utilization during the peak period – 5:00pm to 8:00pm. Assuming the first main building at the new campus site is Brigham City is expected to hold the same number of students as the existing campus site (1,971 students), then approximately 350 parking stalls would need to be supplied at the new campus site for the first building (using the Brigham City rate of 0.25 stalls/student). Thus, preliminary numbers indicate around 2,000 parking spaces are needed for the 100-year full build of the site.

Next five years as the main campus building is built. ADT’s expected to rise but generally stay at or below 4,000 vehicles on Fishburn and 990 South. In both the short- and long-term future, internal ADT is expected to remain low while the main entrances to campus, such as Fishburn and 1000 South, are expected to increase substantially.

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In the future, the Campus is expected to grow in the next hundred years to 3,900 full-time equivalent students (FTE); or roughly 3,100 students (the USU Brigham City Campus Feasibility Study cites a ratio of FTE to headcount as 2:1). Thus, preliminary numbers indicate around 2,800 parking spaces are needed for the 100-year full build of the site.

Average Daily Traffic (ADT)
Existing traffic volumes internal to the site are minimal. Existing ADT on 200 East is 730, on 800 South is 490, and 1000 South is 1,110. Over the

Why Complete Streets for USU BC?
Complete streets are those that adequately provide for all roadway users, such as bicyclists, pedestrians, transit riders, and motorists, to the extent appropriate to the function and context of the street.

One of the transportation goals of this master plan is to make campus streets serve as destinations in themselves as part of the open space system rather than thoroughfares for automobiles.

Describing design with this concept in mind does the following:

1. Improve the functionality and appearance of streets
2. Facilitate pedestrian and bicycle travel
3. Reduce the potential for speeding and other safety problems
4. Introduce desirable elements, such as landscaped strips, street furniture, public art, street trees, etc.

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1. Campus transportation routes will be pleasant, safe, and beautiful corridors
2. Transportation routes will be part of the open space system and will not serve merely as conduits for vehicular travel
PUBLIC DIALOGUE

Open Houses

Two public Open Houses were held during the master planning process. These provided opportunities for Stakeholders (businesses and residents in close proximity to the site), and citizens to contribute to the planning process.

Open House #1 August 2011: The meeting was attended by about 60 residents of Brigham City. This included attendees to the Stakeholder Meeting which preceded the Open House. The Open House was the first formal opportunity to introduce initial concepts to residents. Concerns from residents were addressed, where feasible, helping immensely to determine the overall functional relationships and layout of the campus. Public comment cards were also available and the comments provided were documented and can be found in Appendix B of the report.

For instance, residents to the immediate east of the campus property had concerns with the then planned location of a parking garage (100 year build out) in the northeast corner of the property. (see Appendix B for early concepts). The Planning team responded to these concerns and relocated the parking garage to another site on the property.

Open House #2 January 2012: The second Open House, which was attended by about 40 residents, was held five (5) months later to update residents on the plans and concepts and to give them another opportunity to contribute to the process. Dr. Tom Lee, Dean of the Brigham City Regional Campus briefed attendees on the entire process. He also took questions from the residents regarding justification for the project, student enrollment projections and the project time line.
Brigham City

Brigham City’s Mayor, elected officials, and City staff were actively involved in the planning process and played a vital role by providing the consulting team with the relevant background information and technical resources.

Departmental Staff Meetings: Two meetings were held during the process with Brigham City departmental staff. The first meeting focused on existing conditions and background information. This was necessary to inform the consulting team on the City’s standards and requirements for development. Civil and infrastructure maps for the site were also discussed in the first meeting.

The second meeting came later in the process and focused on presenting the concepts and layout to the City staff for their review. Staff members examined the proposed layout and ensured that there were no red flags in the proposed concepts.

City Council: Brigham City Mayor Dennis Fife was very involved in the planning process and attended both Open Houses, departmental staff meetings and a project progress meeting. (Project progress meetings were held frequently and involved the planning consultants and representatives from USU and Brigham City).

A formal presentation was made to City Council to brief Council Members on the planning process. Council Members responded positively to the Plan’s intents.
3. CAMPUS ILLUSTRATIVE PLAN

SPATIAL DISTRIBUTION

Site Context

The site for the new campus draws energy from its proximity to major transportation corridors (Highway 89, Main Street), a mix of land uses on its periphery, a backdrop of Eagle Mountain Golf Course, and the benches of the Wasatch Mountain Range. The 40-acre site slopes gently, but considerably, from the northeast to the southwest corner—a change in elevation of about 55 feet. The site’s location also lends itself to the role of a gateway to Brigham City.

Site Design Considerations

Connections: Connections, as expressed in site design, play functional, spatial, and visual roles. The campus was designed with an understanding of these connections and their impact on the built form.

Functional connectivity ensures that campus buildings meet the needs of users and contribute to efficiency in daily tasks. An example may include the relationship between the location of the main administrative building and a parking garage.

Spatial connections are concerned with the relationships between solids and voids on horizontal and vertical planes across the campus. Solids and voids refer to built structures and adjacent open spaces. How these interact with each other create overall volumes and spaces which are comfortable to the pedestrian and which aid in the overall performance of the campus design.

Visual connectivity is concerned with sight lines and the impact of vistas, edges, nodal points, etc on the users of the campus as well as the connection to the site’s periphery. In particular, the visual connections to the first building on campus (the new academic building), from Main Street was a major consideration.

Vistas: A vista is a landmark, visual terminus, or focal point. Vistas help with way finding and legibility, while helping to create an identity. The campus was designed with a consideration for the location of vistas and focal points. The primary focal point will be the tower envisioned for the top of the main academic building. Another major vista is a bell tower that terminates the east end of the primary east-west pedestrian mall. Elements on some campus buildings will serve as vistas and contribute to legibility of campus.

Placemaking: Campuses are typically self-sufficient spaces within a larger urban or rural setting. They serve as destination and sojourning points for their users for...
several hours in a day, and for several days in a year. Campus spaces should therefore be dynamic, interesting, and beautiful all year while supporting the primary role as an academic institution.

Placemaking is a term that describes the provision/creation of open spaces like parks, plazas, squares, landscaping etc., for the enjoyment and pleasure of people. Campuses that are designed with an underlying placemaking objective are successful at retaining users in different zones for different activities. The campus has been laid out to serve as a backdrop for placemaking through all its phases of development - from the first phase to the third phase or 100 year build out. Quads, open spaces, and linear pedestrian malls offer opportunities for the inclusion of placemaking elements and pedestrian amenities. Placemaking elements include plazas, amphitheaters, band stands, waterbodies, gardens, signage etc.

CAMPUS PLANNING CONCEPTS AND LAYERING

The campus will bring together multiple systems and functions to create a space that promotes academic work, reinforces the identity of Brigham City and USU, and respects and protects the natural environment. Due to its proximity to Main Street, the campus will offer a presence that will serve as a gateway and focal point for Brigham City. Its location will enable the campus to meet certain community needs such as recreation and learning resources.

The master plan intends to marry the built and natural environments on the campus with minimal impact on existing natural systems throughout its growth. In so doing large portions of natural vegetation and native plants will be incorporated in the landscape design of the campus. Pedestrian activity will be primary on the campus and buildings and spaces will be organized around pedestrian movement patterns. A loop road around campus will serve as the organizing element and contain activity within the core of campus. The following concept overlays describe campus systems at the full build-out.

Landscape Concept

The landscaping will include considerable amounts of natural vegetation and native planting. Native planting eliminates the need to irrigate; demands very little maintenance; reduces erosion to a minimum; increases habitat for native flora and fauna. Hard and soft programmed landscaped areas will complement the natural areas. Tree canopies will line the loop road areas and occur along major accesses and as clusters with the landscape program.

Mobility Concept

Efficient mobility systems are important for the day to day functioning of an academic campus. Mobility systems include modes such as pedestrian, bicycle and vehicular movement. Well-functioning systems eliminate conflict and maximize the utilization of each mode.

USU’s Brigham City Campus is envisioned as a pedestrian friendly campus which will allow students, faculty, and visitors to move between buildings and outdoor spaces with minimum conflict with automobiles. Well programmed pedestrian malls with pedestrian amenities will serve as major corridors of activity and mobility within the location. Although dedicated to pedestrian (and bicycle) activity, these malls will allow access to service and emergency vehicles as needed. A multi-use trail will be located along the loop road to provide pedestrian and vehicle connections to other roads in the City. Vehicular traffic will be limited to the periphery - along the loop road and the private access road to be placed a block east of Main Street.

Parking: A number of surface parking lots will be placed at the periphery of campus providing access to most campus buildings. A parking garage will be located at an appropriate location on campus to serve as a central parking point.
Building the USU Brigham City Campus Master Plan

PLANNING & DESIGN PRINCIPLES

Criteria

1. Accommodate projected increase in enrollment in a 100 year time horizon, and phased development consistent with enrollment details and projected use of the existing traffic signal at 990 South and Main to maintain a safe access to and from the campus.

2. Preserve the community grid system, for the core of the campus and for the City. Current planning numbers project the need for more efficient building in the finite land resource. Buildings should be designed to support and frame open space fabric.

3. Strengthen & clarify USU’s image as part of a traditional campus layout and egress to and from the campus. This implies that a combination of 2 to 3 story buildings should be able to meet the needs of the campus at the 100 year time horizon. Due to the long vision time frame, it is the intent of the Plan that each phase functions efficiently to provide the academic needs of the campus while strengthening the fabric of the community. The diagram below provides an approximate time line for the phase development of the campus.

4. Establish a connected campus: Physical connectivity and use. In that regard interior spaces on the campus should be connected to the rest of the City and the greater region with a transit system.

5. Efficient and safe pedestrian and vehicular travel. Pedestrians and bicyclists should be paramount to the design of this campus. A belt of natural vegetation (grasses and shrubs) will weave through the formal pedestrian zones. The campus will be designed to foster the connection towards the back of buildings, where possible. The design should be softened by integrating landscaping and walkways. Parking terraces should be considered.

6. Parking should be adequate to support the space, but should not be a dominant feature. Surface lots should be located towards the back of buildings where possible. The design should be softened by integrating landscaping and walkways. Parking terraces should be considered.

7. Maintain a compact core, and plan for a compact walkable academic core. The conceptual building footprints as shown in the graphic above will allow for the creation of outdoor space and landscaped open spaces while maintaining strong corridors and vistas.

8. Patterns and density of new developments should be compatible with the scale and character of the surrounding community, and should support the campus image.

9. Set forth architectural style and building massing as a crucial component of the Plan that each phase functions efficiently to provide the academic needs of the campus while strengthening the fabric of the community. The diagram below provides an approximate time line for the phase development of the campus.

10. Spatially organize site to allow an orderly phasing of new facilities.

11. Set forth architectural style and building massing as a crucial component of the Plan that each phase functions efficiently to provide the academic needs of the campus while strengthening the fabric of the community. The diagram below provides an approximate time line for the phase development of the campus.

Major Themes

1. Strengthen the University’s role in the Community. The University intends to operate within the broader context of Brigham City providing a focal point for economic development, employment, and an array of community services in the areas of of community recreation, sports, continuing education and culture. The provision of soccer fields, and the proposed location of a recreation center on the campus property for use by residents of the City will help to integrate the recreation into the campus fabric.

2. Preserve the natural environment and USU’s heritage. USU was originally founded as Utah’s Agricultural College in 1888. The University’s image is typically associated as Utah’s agricultural college in particular, will incorporate community demonstration orchard plots. Natural areas and vegetation will be kept into the community fabric. Proposed location of a recreation center on the campus property for use by residents of the City will help to integrate the recreation into the campus fabric.

3. Create a pedestrian friendly campus: The intent is to keep all activity within the core of the campus and to encourage walking and biking for most trips. Pedestrian malls and walkways will be included in the pedestrian zones. The campus will be connected to the rest of the City and the greater region with a transit system.

4. Establish a connected campus: Physical and virtual connectivity is important for the Brigham City Regional Campus. Efficient transportation systems are necessary for the campus to function well. Automobiles, transit, shuttle and bicycle systems are crucial to augment pedestrian activity and bring pedestrians close to their destinations on campus safely and without conflict.

A long-term 100 year planning window is a model for environmental responsibility through the physical development of the campus, and activities such as teaching, research and demonstration. The first two phases of the master plan, in particular, will incorporate community recreation fields and agricultural demonstration gardens and field plots.

Natural areas and vegetation will be kept to aid in storm water management while preserving natural habitats. Sustainable design and planning practices (discussed in detail in Chapter 4 of this document) will also be paramount to the design of this campus.

A belt of natural vegetation (grasses and plants) will weave through the campus landscaping at the 100 year build out.

The USU Brigham City Regional Campus will be an environmental leader, and could include a plaza space, farmer’s market, shopping, and eating opportunities. Also proposed on the campus property for use by residents of the City will help to integrate the recreation into the campus fabric.

Detailed diagrams of the phasing plans can be found on the next few pages.
Phase 1 will establish the identity of the regional campus and create an anchor for its future development.

Phase 1 will consist primarily of the new regional campus academic building, Main Street frontage formal entry and landscaping, and soccer fields for community recreation.

An existing historic building on the campus site will be saved for use as a museum. This structure will be integrated into all phases of the Master Plan and will serve as a landmark on the campus.

USU-owned land to the northwest of campus can be developed into retail pads or commercial development as appropriate to generate revenue and to serve as a community gathering area.
Phase 2 introduces more campus buildings and an innovation campus. An east-west oriented pedestrian mall is laid out from the first building and terminates at a bell tower. The soccer fields are still present and development surrounds it.

A proposed community recreation center will come in at this time to take advantage of the energy from the playing fields and commercial development.
The Illustrative campus plan shows the third phase and 100-year buildout of the campus. It also shows the relationship between the built and natural environments. It represents an ideal future configuration, translating the principles and key planning themes into a graphical representation. The plan illustrates opportunities for development and provides a guide for growth—representing future building envelopes, their relative scale, and how they shape the campus space.

The plan above and the 3-dimensional impression on the next page show opportunities for future buildings, roadways, open space, parking, and pedestrian zones and accesses. The illustrative plan results from a cumulation of projected analyses of campus needs, a campus programming plan, and layers of design concepts. It introduces a spatial order and acts as a canvas to support other principles and best practices including architectural, landscape, and sustainability guidelines.
NEW ACADEMIC BUILDING (FIRST CAMPUS BUILDING)

The new academic building will be approximately 60,000 square feet to house classrooms, faculty and staff offices and student support spaces such as study space and a bookstore. It will also include a large multi-use room and large lecture hall for university and community use. Funding is being sought for an additional 10,000 square foot Business Resource Center. This new building will accommodate the first phase of the move to the new site, consisting of most of the academic program and student support space with the exception of certain science programs that already have high quality lab space in the current facility.

The building will also serve community needs and be a shared resource for the City, County, and school district.
NEW ACADEMIC BUILDING - CONCEPTUAL FLOOR PLANS

**Main Level**
- Lecture hall
- Office
- Classroom
- Business resource center

**Level Two**
- Large class 500 sq ft
- Large class 300 sq ft
- Medium class 600 sq ft
- Medium class 500 sq ft
- Business resource center

**Level Three**
- Large class 800 sq ft
- Large class 600 sq ft
- Large class 500 sq ft
- Business resource center

Dimensions:
- Main level: 21,800 sq ft
- Level Two: 14,300 sq ft
- Level Three: 20,500 sq ft

USU Brigham City Campus Master Plan
4. CAMPUS ARCHITECTURE AND DESIGN GUIDELINES

ARCHITECTURAL GUIDELINES

OVERVIEW

Across institutions, architectural design guidelines represent a spectrum of approaches to development, from highly prescriptive (stylistic requirements and proprietary building materials) to visionary (expressions of purpose or intent). Utah State University, Brigham City Campus encourages unity of development as a campus without resorting to uniformity of architectural style of buildings. The campus should be perceived as a unified whole, with overarching organization relating to primary and secondary elevations, building entries, service nodes and materiality.

The design guidelines are intended to facilitate both an approach to development and an architectural dialogue. The guidelines are also a tool for a design for USU BC and enforce primary organizational concepts to advance realization of the campus master plan. Topics in this section include:

- Massing
- Horizontal Hierarchy & Façade Articulation
- Building Heights and Vertical Hierarchy
- Architectural Style & Materials
- Facilities Planning
- Sustainability

GUIDING PRINCIPLES

- Incorporate quadrangles and courtyards as part of a traditional campus layout plan.
- Identify key nodes and gateways, making use of the existing traffic signal at 990 South and Main and preparing for a main campus entrance at Fishburn Drive to maintain a safe access and egress from the campus.
Parking should be adequate to support the space, but should not be a dominant feature. Surface lots should be located towards the back of buildings, where possible. The design should be softened by integrating landscaping and pedestrian walkways. Parking areas should be considered.

- Maintain a compact core, and plan for infrastructure efficiency. A future central plant location should be considered.
- Pattern and density of new developments to be compatible with the scale and character of the surrounding community, and should support the campus image.
- Architectural style and building materials standards should be set forth and should support the regional context.
- Incorporate principles of green building and sustainability, including passive energy strategies as well as current technology.
- Site spatially organized to allow an orderly phasing of new facilities.
- Site spatially organized to utilize existing K-Mart facility allowing it to be phased out in time.
- USGBC Silver certification or higher.
- Building Rating System compliant, and State of Utah High Performance

BRIGHAM CITY CONTEXT

Brigham City is dominated by a strong urban street grid orienting the campus along the main street. The town, with narrow streetscapes, is walkable, tree lined and pedestrian friendly. The USU Brigham City campus will interface with the street grid to support campus and urban integration.

Blessed with a historic building stock, Brigham City’s late 19th and 20th centuries structures have been respected and drawn upon the crafting new civic buildings. With low window to wall ratios, structured facades separated into building base, middle, and cap, and with towers and other architectural accent. The rhythm of punched openings, roof forms, focused sense of entry, and sheltered porches support the city’s welcoming, friendly nature. Historically, building materials have a textural and modular repetitiveness, and primarily consist of masonry and stone. Grounded, stable and often with hand hewn quality material use has inspire a respect and drawn upon the crafting new civic structures.

Regional Campus proposed campus master plan – its civic structure, academic architecture, and landscape architecture. The three elements are interwoven to form a campus of distinct but integrated design elements supporting a larger, consistent campus fabric.

The civic structure of a campus is composed of its interconnected public spaces, its streets, quadrangles, courtyards, and the major public spaces within its buildings. These constitute the campus’s public realm, organizing and linking together its buildings to form a coherent environment.

The academic architecture is a strong supporting partner giving form to outdoor spaces and crafting campus quality through the use of building materials, spatial organization and pedestrian focused design. Architectures inspired by Brigham City and refined for the USU campus support aesthetic continuity.

The collegiate campus landscape builds upon the streetscape civic qualities of Brigham City and develops into refined exterior plaza and quad, naturalized riparian corridors from the foothills landscape to campus courtyards. These elements support the larger urban context and the more intimate personal spaces.

Campus buildings typically have a strong presence while responding to its local architecture and circulation patterns.
• Buildings and their intrinsic outdoor spaces must support the interdisciplinary, collaborative, community building of the USU BC campus.
• Construction shall be commensurate with a university-level research campus.
• Plan of building lifespan of 50-years.

MASSING

A range of proportional relationships reflects the master plan footprints. Academic, classrooms and administration buildings are in the range of a : a/2, Laboratory buildings of labs flanked by lab support and offices is in the a : a/2 to a : a/3 range, with the narrow dimension between 90 to 100 feet. This approach to massing generates building areas, increase access to daylight and the opportunities for natural ventilation in non-lab spaces.

As the campus will be primarily populated with academic classroom, offices and administration buildings there will naturally be a consistency in building massing. Unique elements, large lecture halls and unique structures such as a campus library, administrative building or student union should be considered iconic structures and be articulated differently. Where deep floor plates are a programmatic requirement, such as recreation facilities, then building articulation that acknowledges campus scale should be considered.

The master plan recommends a variety of uses and floor plan areas but suggests relatively narrow floor plates for most building types.

Horizontal Hierarchy and Facade Articulation

Buildings following the massing and height recommendations will be predominantly horizontal. Without vertical articulation, long, repetitive facades may lack visual interest. Building facades that occur at the terminus of a street or campus quad, site gateway locations to interrupt horizontal compositions. To maintain verticality, these nodes should range in width from one to two structural bays, or 20 to 40 feet.

The master plan suggests locations for primary building entries. Change in program, such as recreation facilities, then building articulation that acknowledges campus scale should be considered.

Buildings should have a base, middle, and top. An articulated ground floor is important, as it reinforces a building’s connection to the public spaces upon which it fronts. The development of the lowest level of a building is an opportunity to mediate between the scale of buildings and he scale of adjacent pedestrian pathways and outdoor spaces through the use of architectural of landscape features or plantings.

Building Heights and Vertical Hierarchy

Utah State University, Brigham City campus buildings will have a range of heights from two to four stories, maintaining a human scale streetscape and pedestrian experience. Typical floor-to-floor heights for academic classroom and lab buildings are in the range of 14 to 16 feet. High bay maintenance and innovation campus technology development areas may require clearance above 20 feet. The activities that require high bay space may best fit in an upper first floor or a one-story wing.

Two- and three-story building design organizations should consider opportunity for change in articulation. Primary building entrances should be located at or near the center of a building’s primary façade and articulated. For secondary building entries typically located near building corners should consider vertical interruptions or articulation of horizontal compositions particularly on long facades.

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Buildings following the massing and height recommendations will be predominantly horizontal. Without vertical articulation, long, repetitive facades may lack visual interest. Building facades that occur at the terminus of a street or campus quad, site gateway or anchor a distinct site present major opportunities for articulation and change of expression. Major entries are also natural locations to interrupt horizontal compositions. To maintain verticality, these nodes should range in width from one to two structural bays, or 20 to 40 feet.

The master plan suggests locations for primary building entries. Change in program, such as recreation facilities, then building articulation that acknowledges campus scale should be considered.

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Two- and three-story building design organizations should consider
with the expectation that materials and components are vertically interwoven to create visual interest and to express sophisticated architectural concepts.

**ROOFSCAPE**

Perhaps as much as any aspect of the building, the roof has the ability to convey character. Additionally, the roof is an area that can contribute to a building’s sustainability footprint. As a stormwater collection point, roof type can influence storm water management. Expressive roof forms in association with penthouse placement and design can be an important consideration for the architectural character of USU BC. For sloped roof surfaces, blue roof strategies should be considered as a means to collect and store rainfall for on site use, such as irrigation, toilet flushing, etc. For low-slope roofs, vegetated “green roof” approaches may be more appropriate, as this minimizes roof runoff through evaporative transpiration and improves water quality.

**ARCHITECTURAL STYLE AND MATERIALS**

**Masonry**

Brick and unit masonry should comprise the body of the building and are appropriate for the development of secondary facades. Masonry uniquely expressed pattern and texture at the human scale and simultaneously conveys massing concepts such as plane and volume. While differentiated from primary facades by material and complexity, secondary facades are expected to be thoroughly designed and respond to program and context.

USU BC will develop an approved range of brick colors and types to provide coherence to the campus; USU BC may also elect to develop a proprietary brick blend as a component of campus identity. Designers are expected to comply with these requirements.

Concrete masonry units (CMu) may be used at the building base or as accents but should not comprise more than one quarter of the envelope.

Consider locally manufactured materials to reduce the embodied energy associated with shipping.

**Accents**

Architectural pre-cast, stone and terra cotta are natural complements to masonry. These materials are appropriate for use at public entries and special architectural elements. When choosing accent materials, it is important to consider limiting the range in variation of color in any single natural or manmade material.

**Storefront and Curtain Wall**

Primary facades, as discussed in the Site Design Guidelines, present opportunities to enhance the arrival experience, terminating visits, primary street or internal campus greens, and building entries. Key opportunities for this type of expression include major gateway entries off of Aggie Boulevard and 1000 South in addition to facades and vistas on 200 West and 400 West.

The storefront and curtain wall systems are an example of a primary facade that is ideal for admitting daylight into buildings. Deep views in buildings also put activities on display and make the campus feel occupied. With this in mind, a significant portion of building facades may be curtain wall with relatively transparent glazing. Use of integral solar shading will prevent unwanted glare and/or heat gain. High-performance glazing will improve the thermal characteristics of the window wall assembly. It is also important to consider the use of building integrated photovoltaic (BIPV) in glazing or shading devices.

**Metal Panels**

A component to curtain wall and storefront systems is metal panels. Metal panels should have limited application as an accent or background material. Metal panels may achieve a contemporary expression through a variety of systems, from traditional standing-seam pans applied to curve surfaces and volumes to the finished appearance of composite panel and insulated stressed skin systems. Face-fastening metal siding is not an appropriate exterior finish, except at maintenance facilities.

Where metal panels receive painted finish, the finish should be maintenance-free, durable, and reasonably non-fading over the life of the facility.

Consider natural finish for metal panels, such as zinc or cooper, which have recycled content and develop a “self-healing” patina.
A play of transparencies and solids optimizes the use of daylight, while creating interesting patterns, rhythms and texture. Interesting and well-articulated roof lines cap this vertical play of elements.

The landscape should reflect the architectural character of the adjacent buildings. Elements on the facade can be repeated in the landscape to create a continuum of expression and a unified identity.

The building envelope should be highly efficient and functional - engaging users inside while aiding in the performance of daily tasks, while creating a comfortable feel and scale on the outside.

Focal points and entry features such as bell towers and are important for cognition of space and for maneuvering through campus, while helping to reinforce a civic/academic feel.

Clearly articulated lines and edges define the character of indoor and outdoor spaces and inform the organization of building forms, landscaping, overall character and movement patterns.

LANDSCAPE DESIGN GUIDELINES

GOALS AND GUIDING PRINCIPLES

Because Utah State University is the State’s Agriculture school, Education and Sustainability are the two over-arching goals that reflect the campus standards. USU having roots in agriculture practices and landscape architecture, the campus landscape design ought to reflect best practices, discovered in these vocations. This means, the integration of functional, aesthetic, and sustainable designs.

To help create an academic feel at this campus, the implementation of universal/accessible design ought to be regarded and maintained. The creation of a safe and accessible environment will achieve this academic feel.

SITE DESIGN

Site design is the physical application of the campus goals and provides guidelines for future development. The following components provided below frame the campus site planning criteria:

- Campus Circulation Systems
- Grading and Stormwater Systems
- Utilities & Services
- Campus Views
- Campus Spaces

Campus Circulation Systems

Because this will be a phased campus, it is important to have a circulation master plan for multi-modal usage. This means creating clear and connected hierarchy for pedestrians, cyclist, automobiles, and mass transit.

Pedestrian Circulation

For this campus, pedestrian circulation should include:

- sidewalks
- plazas
- malls
- trails
- crosswalks

To work effectively, pedestrian corridors will need to be distinct and predictable.

Bicycle Circulation

Like the pedestrian circulation, bicycle corridors will need to be distinct and predictable, but should also be physically or visually separated from the pedestrian walkways. On the perimeter of campus dedicated lanes will help to maintain a safe campus circulation system. Provisions should also be made for bike storage/racks on the campus.

Vehicular Circulation

Automobiles and other motorized transportation systems should contribute positively to the overall landscape. This will include parking areas, routes, and supporting infrastructure.

CAMPUS SPACES

Public Spaces

Academia preaches the importance of democracy and public voice. Creating spaces for students to express themselves
is an important factor to a well functioning campus. These spaces (shown in blue on the next page) range from spaces for large gatherings to small courtyards, and are used for recreation and passive uses. This will include the development of malls, quads, and recreational fields.

Building Sites
Shown in the image as red, these spaces are landscapes immediately adjacent to buildings. These sites could be developed with energy conservation and renewable energy in mind. Sites like these could also play a significant part with rainwater retention and harvesting. Building sites should complement both the structure and the overall master plan.

Edges and Open Spaces
Shown in the images as yellow, these spaces are both intensive and extensive landscapes. Their uses would range from formal campus edges to open fallow fields. Because raw land has a “weedy” look to them, it would be recommended that these landscapes be reseeded with native plants.

Educational Spaces
Depending on the class subject matter, many outdoor spaces can be use to give real-world examples. If Utah State chooses to provide agriculture classes, garden and crop plots ought to be planned and designed to maximize the learning experience. These landscape will work with the phasing of campus plan because they provide a use for vacant lands. Besides agricultural uses, other educational landscape may include sustainable civil engineering, architectural and landscape architectural design, practices. Additionally vacant landscape become wildlife habitat and provide environmental/ ecological educational spaces.

Besides actual outdoor type “labs”, these spaces ought to enhance a studying environment for the campus patron. These study-friendly spaces encourage the importance of education. Plazas, quads, malls and sitting areas encourage these types of outdoor room study environments.

SITE TREATMENTS/DETAILS
There are many details to consider as the campus is developed. When discussing the detail treatments it helps to think from the ground up.

Soil: A well conditioned growing medium that will allow the establishment of all vegetation. It’s important to remove all contaminants and have the appropriate depth for the specified plants.
Groundcovers: A medium ranging from turf grasses and shrubs to organic and inorganic mulches.

Ornamental shrubs: These plants help to define and enhance outdoor spaces through strategic placement. Color, size, shape, texture, and smell are important characteristics to consider when using these plants.

Pavement: A hard walking surface that is easily accessible and that addresses the adjacent environment appropriately.

Drainage: A crucial component of landscape design is how precipitation is managed on a site. When considering sustainability practices in the design of this campus, storm water ought to be managed on-site. On-site retention, (which will most likely be on the southeast and lower end of the campus) should be incorporated in the landscape plan.

Trees: Important environmental elements that have a multitude of functions, i.e. air quality, climate control, aesthetics, and habitat. The appropriate placement of native and adaptive trees will help to establish the campus feel and function.

Pedestrian amenities should enhance the walking experience on the campus and provide comfort to its users. Furnishings include seating/rest areas, information kiosks, water fountains, lights, bike racks, bus shelters etc. These elements also help to tie the landscaping to the adjacent buildings.

Walkways and areas of intense pedestrian activity should be paved with a variety of materials that are safe and comfortable. Earth tones would be preferred for brick pavers and stamped concrete.

Provide proper collection and drainage of water, snow, and ice from roofs, balconies, etc., to avoid standing water on walkways that may freeze and create a slipping hazard. Landscape design should provide for storm water treatment and management on the campus.

Drainage grates must allow safe passage by bicycles and pedestrians, and must be designed with some redundancy to reduce the possibility of clogging by leaves and other debris. They must be compliant with ADA standards.
SUSTAINABILITY STRATEGIES

USU Commitment to Sustainability

In early 2007, USU President Stan Albrecht signed the American College and University Presidents Climate Commitment, thus making USU 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 meet the goals and benchmarks set forth by the Climate Commitment. The Council comprised students, faculty, and staff in addition to USU’s external sustainability stakeholders.

USU will develop appropriate systems for measuring, reporting, and tracking carbon emissions, and is tracking changes annually. The USU Climate Action Plan document outlines key areas that will play a role in achieving climate neutrality by 2050.

Because the USU Climate Action Plan ambitiously aims for climate neutrality by 2050, USU will need to take many steps toward this goal. Reducing and managing energy use are by far the biggest steps. USU has already developed a Sustainability Policy (Policy 5-05). The USU Sustainability Council was convened immediately following the signing of the commitment, and was charged with developing strategies to meet the goals and benchmarks set forth by the Climate Commitment. The Council comprised students, faculty, and staff in addition to USU’s external sustainability stakeholders.

The new USU campus in Brigham City has a unique opportunity to become an example of 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 state that all new buildings must achieve LEED Gold certification at a minimum. It further stipulates that projects must achieve the following credits mostly emphasizing water and energy efficiency:

1. EQ Credit 1.1: Water Efficient Landscaping: Reduce by 50%
2. EA Credit 3.1: Enhanced Commissioning
3. EQ Credit 3.1: Construction IAQ Management Plan: During Construction
4. EQ Credit 4.1: Low-Emitting Materials: Adhesives and Sealants
5. EQ Credit 4.2: Low-Emitting Materials: Paints and Coatings

USU has met or exceeded this standard since implementing the Climate Action Plan several years ago. USU has constructed one (1) LEED Silver building (+ 1 pending).

Sustainability for the new Brigham City Campus

The new USU campus in Brigham City has a unique opportunity to become an example of climate neutrality. The new USU campus in Brigham City has a unique opportunity to become an example of climate neutrality. USU Brigham City Campus Master Plan

Each project must achieve a set of prerequisites and will be awarded up to 39 possible points which will result in varying levels of 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 systems tracking within the LEED family, LEED for New Construction (LEED-NC) will likely be most commonly used for new buildings on the Brigham City 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 set of prerequisites and up to 110 potential points. LEED-ND further subdivides credits into the following categories:

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

Location and Resources

The location of the campus within Brigham City sets it up for economic stability and increased walkability/bikability by its placement near retail and within walking distance of downtown. Brigham City has shown its support, both financial and by way of endorsement of the project, making it a community of choice. Innovations in energy and environmental design will play a major role in the future of the campus.

While the Brigham City campus has its own challenges and advantages for sustainable design, it is part of a large network of Utah State university campuses. Decisions and goals at one location should be made to maximize the location while taking into consideration the larger overarching goals of Utah State University. USU’s initiatives to reduce air travel, transportation, carbon offsets, site and program diversity, and focus areas for specific strategies to review for the Brigham City Campus location include wind, ground source heat and solar opportunities.
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.

Ground Source Heat: Many regions in Utah have been located as viable locations for ground source heat pump use including the Utah House located in Kaysville. With this system the relatively constant ground temperature can be used to pre-heat/cold water or be used to reject waste heat/cooling. To review the Brigham City campus site for potential to use ground source heat pump, USU will need to commission a thermal conductivity (TC) test to explore the grounds ability to move and transmit heat.

Sustainable Site Initiative (SITES)

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

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.
INITIAL CONCEPT PLANS

The planning process explored several options for the layout of campus and for the placement of the first building. Major considerations included accessibility and visibility from Main Street, especially to the first building, and the future growth patterns of the campus.

Five (5) options were initially explored for the master planning of the campus. These are discussed below:

Option 1

Pros:
1. Good views from Hwy 89 to first building which is placed on highest point of campus.
2. First building serves as vista at the end of 400 E.

Cons:
1. First campus building is far from Main Street.
2. Streets run through the heart of campus.

Option 2

Pros:
1. Good views from Hwy 89 to first building which is placed on highest point of campus.

Cons:
1. No need to realign existing campus streets.
2. First two (2) phases can work with Kmart building in place.
3. First campus building is far from Main Street.
4. Streets run through the heart of campus.

APPENDIX A: CONCEPT PLAN PROCESS

1. First campus building is far from Main Street.
2. Streets run through the heart of campus.
3. First two (2) phases can work with Kmart building in place.
4. No need to realign existing campus streets.
5. First campus building is far from Main Street.
6. Streets run through the heart of campus.
Campus development can continue for a while without affecting Kmart building.

Option 3:
- First campus building is far from Main Street.
- Streets run through the heart of campus.

Pros:
- First campus building is far from Main Street.
- Streets run through the heart of campus.

Cons:
- First campus building is far from Main Street.
- Streets run through the heart of campus.

Option 4:
- This option locates the first campus building north of the Kmart building and between Main Street and 200 E.

Pros:
- Good views to first building from Main Street.
- No need to realign existing campus streets.

Cons:
- May be difficult to create a cohesive campus feel.
- Existing Kmart building may hinder campus development in first two phases.

Option 5:
- This option locates the first campus building to the east of 400 E and about halfway between 900 S and 1000 S.

Pros:
- Good views to first building from Hwy 89.
- No need to realign existing campus streets in the first two phases.
- Opportunity for consolidated campus development.

Cons:
- Kmart building will block views from Main Street to first campus building.

Consolidated concept (named Option 6) is shown and discussed below:

Option 6:
- Option 6 was carried through for most of the process until the final plan was developed.

Pros:
- The major consideration for Option 6 was the creation of a loop road (referred to as a roundabout) to keep traffic flow and its cross sections.
- A roundabout was originally proposed for the intersection of the loop road and 200 E with an idea of eliminating the lower portion of Main Street as future phases. The roundabout was to serve as a gateway feature as one approached the first building on campus.

Cons:
- However the roundabout concept was discarded for a 4-way (eventual 3-way) option.

Final Concept:
- The final concept for the master plan is discussed in detail in the third chapter of this document (Illustrative Plan). The final concept places the first building on the Kmart site to take advantage of the Main Street presence, while maintaining most of Option 6.
Comments from residents in both open houses were generally positive and applauded the efforts of creating the new campus in Brigham City. A sample of public comments from the first Open House in August 2011 are documented below:

I am very concerned about the location of the parking garage in the master plan. It is right across from residential homes where young people/children play. I believe that is a real danger to our children. A better option may be to locate the parking closer to Main Street where it is easier and accessible to all attending the University.

Please seriously consider moving the parking garage in the back of the property away from the residential areas so the amount of traffic generated by a parking garage will not affect the safety of the children that play and ride their bikes on those streets. Please keep our children safe!!

Very concerned about location of parking garage being too close to homes. This will reduce our home value, be an eye sore and cause terrible traffic problems for children.

Very excited to see this come about – I hope things can come forward.

This will be a beautiful addition to Brigham City, it will be fun to watch it grow.

Glad to see steps being taken in this direction. Great boon to BC.

Beautiful looking forward to seeing it build out!!

I am excited to see what happens with this land development. I currently reside in the Eagle Ridge Condominiums and feel that the property could definitely benefit from this development. Keep up the good work on keeping us informed.

This is a great plan but obviously would like the plan to be quicker than the “100-year plan”

I feel it would be fantastic to incorporate Indian art and design in the planning of this facility.

Design looks fine but need to keep parking controlled so neighbors won’t have concern on crowding.

I was so excited when they told us you purchased this land, was going to use it to enhance this area and continue to provide higher education in this area. Good luck and God speed.

We think it is great to have a parking garage, congratulations.

Would love to have a copy of your long-term anticipated development plans. We are so excited about your plans and look forward to seeing you grow over the years.

Looks great!! I also got valuable info on taking classes. Suggestions: we could use some more individual and fast food in Brigham. I hope they’ll put in a stoplight or two on Main Street.

Here are some comments I feel are pertinent to the planning you are involved in:

1. Parking area will never be enough. So plan on double what you think its going to take.

2. Streets should be extra wide so people can park on either side and also drive both ways.

3. There is no nice meeting place for groups to get together for lunch and other functions in Brigham City today. For many years people used the large room in the Brigham City Community Hospital at a nominal charge for their get together. But that room is now used for physical therapy and no longer available. The new academic building should have such a room on the main floor available for rent to local groups for such functions. An attached kitchen for serving (and not cooking groups) the food would be an asset.

4. A walking/jogging track around the recreation area would be a plus.

5. The land facing Main street should be saved for future businesses. The campus will attract new businesses- eating places, clothing stores, fitness equipment stores, bicycle shops etc.- a good source of income for the university.

6. Continue to have open houses every 6 months or so to keep the public updated. Have a formal presentation when you do.

Two public Open Houses were held during the planning process to explain the process to residents and to solicit input. The first open house was held on August 18, 2011 and the second on January 5, 2012.

The Open Houses were advertised in the local newspapers and in the USU newsletter. Individual letters were also sent to stakeholders (residents and businesses in close proximity to the campus).

Both Open Houses were well attended with attendees including stakeholders to the campus, citizens of Brigham City, City staff and elected officials. USU staff, the press, and the general public.

Two public Open Houses were held during January 2012 on the USU Brigham City campus in Brigham City. A sample of public comments from the second Open House are documented below.

Comments from residents in both open houses were generally positive and applauded the efforts of creating the new campus in Brigham City. A sample of public comments from the second Open House in January 2012 are documented below:

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Both Open Houses were well attended with attendees including stakeholders to the campus, citizens of Brigham City, City staff and elected officials. USU staff, the press, and the general public.
A feasibility study was conducted in the fall of 2010 as a precursor to this master planning effort. The scope of the study was as follows:

1. Develop an understanding of the vision and mission of the Brigham City Campus.
2. Develop an understanding of the unique functional considerations of the regional campus, including demographic information, distance education, and the needs of a non-traditional student body that primarily commutes.
3. Determine current and future space needs, based on enrollment data and projections.
4. Develop an inventory of existing space (SU database can provide) and parking.
5. Develop an analysis of the proposed new site and potential expansion configurations. This analysis is to include consideration of proximity of utilities, access, transit, parking, safety, zoning, multi-use potential, and regional context.
6. Outline master planning principles. Incorporate those set forth by SUU, Brigham City, while responding to unique contextual and functional considerations.
7. Provide an illustrative site layout for each phase of the campus development.
8. Provide a cost estimate, including land costs, infrastructure costs, renovation costs, and new construction costs.

The following data helped inform the feasibility study and the master planning process:

USHE SF/FTE DOCUMENTATION

Statewide Demands

SUU Square Feet per Student Comparison

SUU Square Feet per FTE Student

SUU Square Feet per Undergraduate FTE Student

SUU Square Feet per Graduate FTE Student

SUU Square Feet per Undergraduate Student

SUU Square Feet per Graduate Student
The following programs are currently being considered as future offerings at the Brigham City Regional Campus.

- Criminal Justice
- Forensic Science
- Recreation Resource Management
- Aerospace Technology
- Health Sciences
- Computer/Office Systems
- Agribusiness

**FUTURE PROGRAMS TO BE OFFERED AT USU BC**

*Currently serve many pre-nursing, pre-med students with biology and chemistry courses that use the cadaver lab and medical technology.*

**EXISTING FACILITY**

The existing Utah State University Brigham City Regional Campus includes the following square foot breakdown:

<table>
<thead>
<tr>
<th>Description</th>
<th>Interior Sq Ft</th>
<th>Sq Ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC Regional Campus</td>
<td>10,761</td>
<td>14,290</td>
</tr>
<tr>
<td>Brigham City Faculty/ Administration</td>
<td>5,719</td>
<td>16,701</td>
</tr>
</tbody>
</table>

**EXISTING FACILITIES**

- Administration
- Laboratory Spaces
- Classroom/Study Rooms
- Library/Study Rooms
- Dining Commons
- Student Recreation Center
- Student Life Center
- Student Housing

**EXISTING PROGRAMS**

- **Undergraduate Programs**
  - History
  - Psychology
  - Science
  - English

- **Graduate Programs**
  - Math
  - Social Studies

**Certification Programs**

- Early Childhood Education
- Childhood (ATP)
- Teacher Preparation (UMEP)

**Degrees & Programs Available in Brigham City**

<table>
<thead>
<tr>
<th>Master's Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture Systems Technology</td>
</tr>
<tr>
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**Additional Information**

- Courses are offered in one or more of the following formats:
  - Face to Face
  - Hybrid
  - Interactive Broadcast
  - Online

- Other resources located on campus include the Little Brigham Aggies Early Care and Education Center and the USU bookstore.
- Lower division courses are available for engineering and health sciences.
- Minors are available in Anthropology and Sociology as well as many of the bachelor's degree programs.

**Degrees & Programs Available in Brigham City**

- **Associate's Degrees**
  - Business Administration
  - Business Management
  - Computer Science
  - Interdisciplinary Studies
  - Social Sciences

- **Certifications**
  - Criminal Justice
  - Office Systems Support (OSS)
  - Pre-Engineering

- **Continuing Education**
  - Business
  - Computer Science
  - Criminal Justice
  - Education
  - Engineering
  - Forensic Science
  - Health Sciences

**Contact**

- Brigham City Campus
  - 855A - Brigham City Branch Campus Expansion
  - (435) 734-2277

brighamcity.usu.edu
7. APPENDIX C: ENGINEERING MEMORANDA
January 23, 2013

This report is a product report to be in draft and submits the campus site review within the work set by the Brigham City Campus Master Plan Task Force. The Task Force was established to document the existing site conditions and develop development guidelines for the future development of the Brigham City Campus. The report is intended to support the Brigham City campus and other Brigham Young University campuses in the planning and development of the campus site.

Sustainable Brigham City

Sustainable Brigham City is a critical component of the Brigham City Campus. The Sustainable Brigham City plan is intended to ensure that the campus is designed and built in a way that will minimize its environmental impact and maximize its sustainability. The Sustainable Brigham City plan is intended to ensure that the campus is designed and built in a way that will minimize its environmental impact and maximize its sustainability.

Existing Use and Zoning

The information shown within the table above includes the current status of the Brigham City Campus. The current status of the Brigham City Campus is outlined in the table below.

Existing Use: Zoning

- ae: Agri-land East
- ar: Agriculture Rezoning
- a: Agriculture
- cd: Commercial District
- co: Commercial Office
- cx: Commercial X
- dr: Commercial District
- gr: General Rezoning
- h: Highway
- nd: Non-Density
- o: Office
- oz: Office/Zone
- rz: Residential Zone
- ts: Transportation
- x: X-use
- z: Commercial
- zr: Commercial Rezoning
- zt: Commercial Transportation
- zt: Commercial Transportation
- ze: Commercial/Industrial East
- ze: Commercial/Industrial East
- ze: Commercial/Industrial East
- ze: Commercial/Industrial East

Existing Uses:

- Agricultural Uses: 1,150 acres
- Non-Density Uses: 2,000 acres
- Commercial Uses: 300 acres
- Residential Uses: 500 acres

Existing Zoning:

- Agriculture Rezoning: 1,150 acres
- Commercial District: 300 acres
- Commercial Office: 200 acres
- Commercial X: 100 acres
- Residential Zone: 500 acres
- Transportation: 100 acres

Existing Uses Analysis:

- Agricultural Uses:
  - 1,150 acres
  - 90% of the land is under existing use
  - 10% of the land is under future use

- Non-Density Uses:
  - 2,000 acres
  - 50% of the land is under existing use
  - 50% of the land is under future use

- Commercial Uses:
  - 300 acres
  - 50% of the land is under existing use
  - 50% of the land is under future use

- Residential Uses:
  - 500 acres
  - 50% of the land is under existing use
  - 50% of the land is under future use

- Transportation:
  - 100 acres
  - 50% of the land is under existing use
  - 50% of the land is under future use

Existing Uses Analysis:

- Agricultural Uses:
  - 1,150 acres
  - 90% of the land is under existing use
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- Commercial Uses:
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  - 50% of the land is under future use

- Residential Uses:
  - 500 acres
  - 50% of the land is under existing use
  - 50% of the land is under future use

- Transportation:
  - 100 acres
  - 50% of the land is under existing use
  - 50% of the land is under future use
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