SUL ROSS
THE FRONTIER UNIVERSITY of Texas

A member of The Texas State University System

SUL ROSS STATE UNIVERSITY MASTER PLAN- EAGLE PASS CAMPUS

2024

PRESIDENT'S LETTER

Dr. Carlos Hernandez
President

Part of what draws students to Sul Ross State University in the Middle Rio Grande region is the ability to stay close to home while they receive a first-class education. As we have the chance to expand our program offerings, it is time now that we offer them a "home away from home" in the form of a campus where they can benefit from our mission to deliver life-changing opportunities.

In the 1970s, a study center was established on the campus of Southwest Texas Junior College in Uvalde to provide upper level courses for the residents of the city, along with those in Del Rio and Eagle Pass. The State Legislature renamed this center, Sul Ross State University Rio Grande College in 1995. With a desire to expand to include lower level courses, this Master Plan is the first step in providing a complete, four-year higher education experience focused on student success and realizing the dreams of the regional community.

The Sul Ross State University Master Plan-Eagle Pass Campus is unique in that it has been developed and designed on a 100-acre site that is currently undeveloped. The site, which is considered a blank slate, is a desert-like open space with two unnamed tributaries and a small freshwater pond with variable water levels that serves as a central feature in the campus development.

Sul Ross State University has been a pillar of education and opportunity for underserved students since its establishment. Our students are mostly Hispanic, mostly first-generation, and often low-income. As they rise from a, sometimes, harsh environment, so will Sul Ross State University in Eagle Pass.

While our path forward may appear harsh and overgrown, we are clear about where we're headed.

The future is bright.

J. Carlos Hernandez, Ed.D.
President

ACKNOWLEDGMENTS

The planning team would like to thank the many individuals who contributed to the development of the Sul Ross State University Master Plan-Eagle Pass Campus, including the President, Master Plan Committee, Board of Regents and System Administration who provided valuable insight and feedback about the vision for the campus.

MASTER PLAN COMMITTEE

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Student Wellness Center

EXECUTIVE SUMMARY

SCOPE OF THE MASTER PLAN

This Master Plan provides a multi-year comprehensive plan for a new four-year Sul Ross State University (SRSU) campus in Eagle Pass, Texas. It outlines the vision and framework for phased growth and development over multiple decades. In order to support SRSU's goals and provide a high-quality experience for students, faculty and staff, the campus is considered in terms of target enrollment and phased development of buildings, transportation, landscape and infrastructure.

The Master Plan includes project-specific recommendations to provide educational and experiential offerings in both the near- and long-term. The Master Plan is not intended to be constraining and prescriptive, and its graphics do not represent specific site or building designs. Rather, they illustrate recommended uses and locations of buildings, facilities, pedestrian gathering areas and landscape features.

The Master Plan is intended to allow flexibility and imagination while ensuring consistent, sustainable and quality implementation. It is intended to serve as the baseline to guide project designers while allowing and encouraging creativity. However, it should not be interpreted so loosely as to permit entirely different initiatives and conceptual directions. The goal is to achieve a balance between this Master Plan and mutual decisions that must be reached throughout each project's development process. The skillful use of this Master Plan by university planners, designers and facility managers will result in a functional, memorable and sustainable SRSU Eagle Pass campus. This document should be a living document, periodically reexamined and updated as campus challenges evolve.

PROCESS

The development of the Master Plan included the four main phases described in Figure 1. In the Information Collection Phase, the consultant team gathered information about the existing conditions on the property through a site visit, research and a variety of stakeholder interviews. This information was used to establish the vision for the SRSU Eagle Pass campus.

The Analysis & Schematic Phase included an analysis of the site location, environmental conditions, locally available utilities and previously developed demographic analysis. This analysis established the target enrollment for SRSU Eagle Pass and informed the development of campus building blocks and two initial concept plans. A Utility Master Plan and programming of the first building were also started during this phase.

In the Review Phase, the consultant team revised the selected concept plan and

Figure 1. Planning Phases

subsequently developed the draft Master Plan recommendations and illustrative plan. The consultant team worked closely with SRSU leadership and the Master Plan Committee to review the recommendations and illustrative plan.

In the Refinement/Final Phase, the Master Plan document was finalized and presented to the Master Plan Committee and Board of Regents for approval.

MASTER PLAN COMMITTEE

To ensure that the Master Plan reflects the wants and needs of future campus users, a Master Plan Committee (MPC) provided feedback throughout the process. The MPC consisted of 10 members and met with the consultant team multiple times to discuss existing conditions, conceptual plans and draft recommendations, and to provide guidance on the planning process. The input received directly influenced the vision and recommendations of this Master Plan.

VISION & MISSION

WHO WE ARE

Sul Ross State University is a small, diverse community that values personal interactions while providing life-changing opportunities for students through quality undergraduate and graduate education, in-person and online.

MISSION STATEMENT

Sul Ross State University offers life-changing opportunities by delivering quality undergraduate and graduate education. We foster critical thinking, creativity, diversity and research, empowering our students to excel beyond the frontiers of what is possible. We are a Hispanic serving public institution for the residents of the U.S./Mexico borderlands, Southwest Texas region and beyond.

VISION

We aspire to be the best value in Texas higher education and expand access to higher education for the underserved populations of the State. We will accomplish this by providing high quality, innovative, and flexible academic programs within a culturally inclusive environment, where students learn to develop creativity, foster critical thinking, enhance diversity, and engage in research to serve our region, state, and nation as impactful members of an educated society.

VALUES

- Student Access and Success
- Ethics and Integrity
- Academic Excellence
- Diversity, Equity and Inclusion
- Mutual Respect and Collaboration

STRATEGIC PLAN

One of the 2022-2027 SRSU Strategic Plan goals is to:

Implement The Texas State University System goal of transforming Rio Grande College into a branch campus prior to the transformation into an independent, four-year university in Eagle Pass, Texas.

There are ten targeted outcomes of this goal, including:

- Transform Rio Grande College into a comprehensive university by creating, developing and offering lower-level (freshmen and sophomore) coursework in addition to the existing upper level and graduate coursework.
- Have degree programs specific to the Middle Rio Grande region.
- Develop and implement faculty recruitment procedures for expanding and retaining a diverse faculty.
- Elevate the status of Rio Grande College to the level of a branch campus in preparation for full university status.
- Prepare appropriate policies and procedures for full university status.
- Develop a tailored, experienced and qualified workforce with the appropriate new administrative positions.
- Achieve The Texas State University System (TSUS) milestones required for branch campus status.
- Enhance the image and visibility of Rio Grande College as an emerging university.
- Broaden community engagement and public service opportunities among the surrounding communities of the region.
- Develop a marketing approach that effectively highlights Rio Grande College's role as a regional leader in higher education.

CAMPUS PLANNING PRINCIPLES

Based on SRSU and stakeholder feedback, a series of campus planning principles were developed to reflect the values of SRSU, TSUS and the community vision for the campus. The following principles helped to guide planning decisions and evaluation of conceptual solutions developed during the planning process.

- **Establish a campus layout that harmonizes with nature.**
- **Promote a comfortable pedestrian experience.**
- **Foster and enhance outdoor experiences.**
- **Cultivate a welcoming environment.**
- **Plan for thoughtful and strategic phased growth.**
- **Solidify SRSU as an educational pillar of the region.**

MASTER PLAN OVERVIEW

SRSU has a rich history of providing educational opportunities to students and residents not only in the Big Bend region of far West Texas but also to those in the Rio Grande region of the state of Texas. In the 1970s, an off-campus study center was established on the campus of Southwest Texas Junior College in Uvalde to provide such opportunities for residents of the Uvalde, Del Rio and Eagle Pass areas to pursue upper-level and graduate work in teacher education and business administration.

Known as Rio Grande College (RGC), the Texas Legislature renamed RGC in 1995 to Sul Ross State University Rio Grande College, recognizing its service to the area of the Middle Rio Grande and Wintergarden regions. Today, SRSU has distance learning centers on the campuses of Southwest Texas Junior College in Uvalde, Del Rio and Eagle Pass, serving 13 counties in Southwest Texas.

With a desire to expand offerings beyond upper-level courses, the SRSU 2021 Campus Master Plan researched and explored the possibility of developing a larger presence in the Rio Grande region and made a recommendation for an independent SRSU facility that would include lower-level courses, helping to develop four-year degrees that do not currently exist today. The development of the Sul Ross State University Master Plan-Eagle Pass Campus is the first step in providing a complete higher education experience that will allow students to complete their university career at one institution, from undergraduate to graduate level courses.

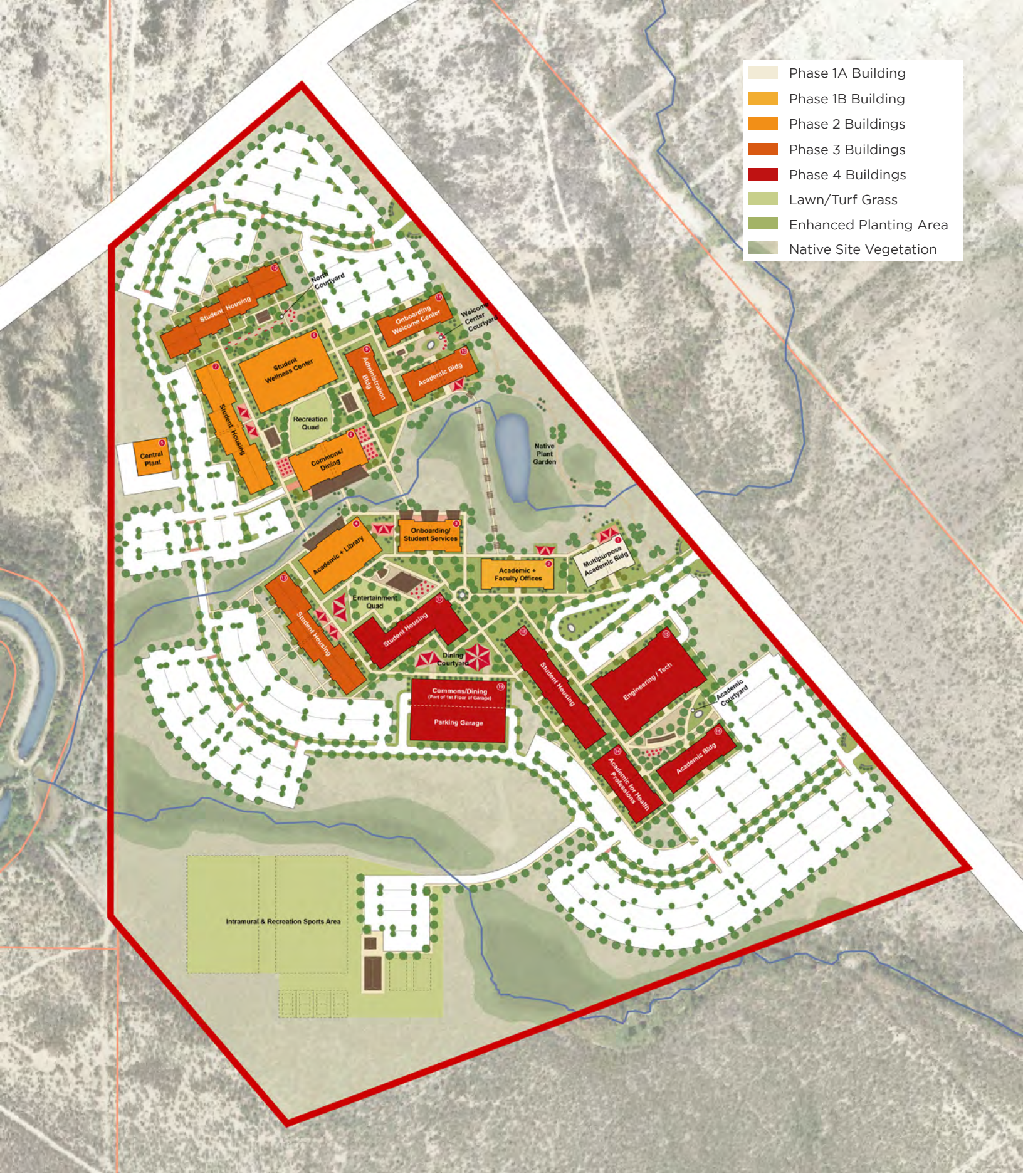
This Master Plan is unique in that it has been developed and designed on a 100-acre site that is currently undeveloped. The site, which is considered a blank slate, is a desert-like open space and has a variety of topographic slopes throughout. The site also has two unnamed tributaries and a small freshwater pond with variable water level that serves as a central feature in the campus development.

The Master Plan is designed to serve, at full buildout, an enrollment of 10,000 students and features four phases, with the initial phase being broken into two sub-phases. Phase 1A will include the campus's first facility that will serve as an all-inclusive academic and administration building and is to be constructed within the next few years. The first building sets the tone for the overall campus and establishes the architectural character that will be carried through all four development phases. Notably, the majority of buildings on campus are proposed to include breezeways that allow pedestrian circulation through the building to provide shade and reduce walking distances. Similarly, building arcades could also be employed for weather protection and pedestrian comfort. The 41,000 gross square foot (GSF), three-story building will provide outdoor gathering spaces that are replicated in other areas of the campus at buildout.

Phase 1B includes additional academic and administrative uses and faculty offices, helping to establish core and essential spaces needed for an institution to operate and function in a way that adequately serves students. Phase 2 begins to incorporate services and facilities that are student-centric, such as a dining facility, student wellness center, library and student housing for 400 students. Phase 2 also establishes a central plant, helping to serve the campus, which will stand at eight facilities at the conclusion of Phase 2.

In Phase 3, student housing is increased by 800 students and anchors the northwest portion of the site with an Onboarding Building/Welcome Center and administrative and academic facilities. Meanwhile, Phase 4 builds out the southern portion of the site with academic facilities, student housing and a dining facility incorporated into a four-level parking garage. At full buildout, parking areas are located on the outer edges of the campus, with an access road that connects the entire campus.

While these phases have been laid out in the most logical campus development, based on funding and other physical constraints, phases could vary in how they are ultimately constructed and developed; however, this Master Plan will serve as the overall guide for the SRSU Eagle Pass campus development.



Map 1. SRSU Eagle Pass Campus Master Plan

Scale: N.T.S. N

Figure 2. SRSU Eagle Pass Campus Aerial Illustration

Figure 3. Entertainment Quad Illustration

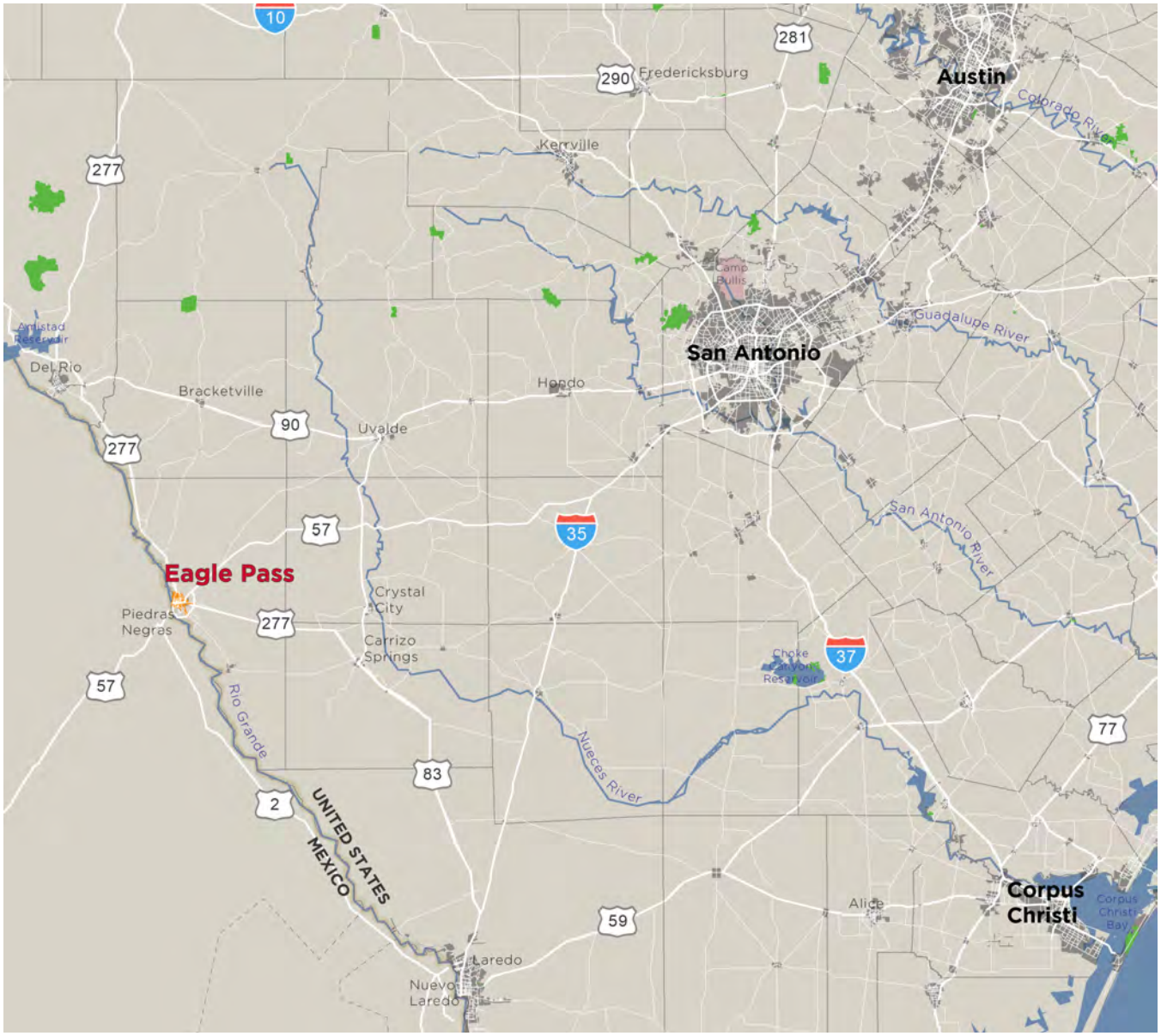
Figure 4. Illustration of View from the First Building toward the Entertainment Quad


ARY & ACADEMIC

EXISTING CONDITIONS & ANALYSIS

REGIONAL CONTEXT

The future SRSU Eagle Pass campus will be located in Eagle Pass, Texas, a city of approximately 29,000 residents and the county seat of Maverick County. Located approximately 130 miles southwest of San Antonio, the City of Eagle Pass (City) is a border town along the banks of the Rio Grande. The City is a major transportation corridor between the U.S. and Mexico and is connected by two bridges to Piedras Negras, Coahuila, Mexico. Piedras Negras has an approximate population of 176,000 inhabitants. Together, Eagle Pass and Piedras Negras form a larger binational metropolitan area.



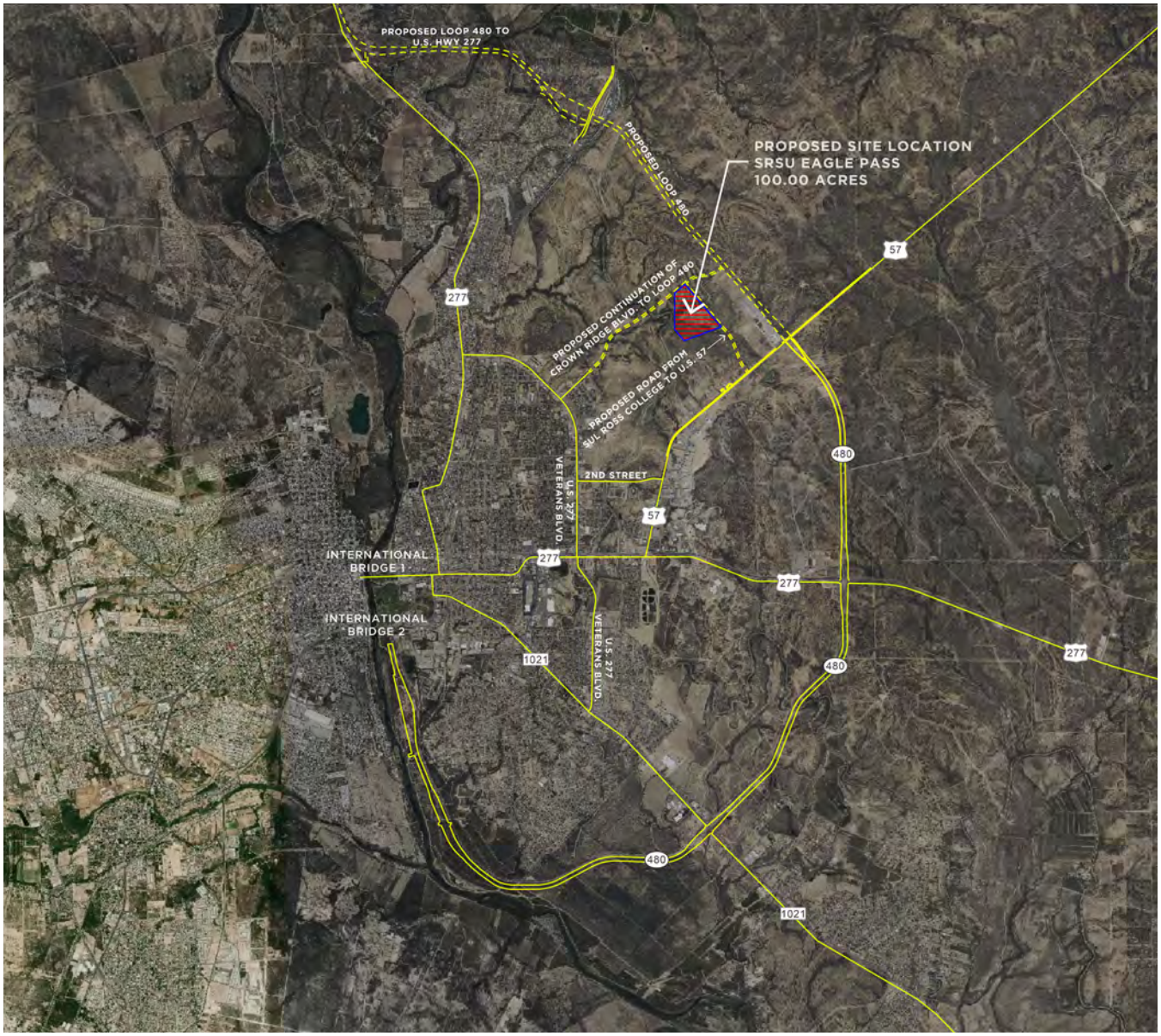
Map 2. Regional Context Map

LOCATION & SURROUNDING CONTEXT

Spanning 100 acres, the SRSU Eagle Pass campus is located northeast of the developed part of Eagle Pass and is located approximately 1 mile northwest of the U.S. Hwy. 57/Loop 480 intersection. Currently, the campus site is not accessible via a paved road. However, proposals to extend Loop 480 to U.S. Hwy. 277, an extension of Crown Ridge Boulevard to the proposed Loop 480, and a new road connecting the Crown Ridge Boulevard extension to U.S. Hwy. 57 will all be essential to providing future access to the campus.

The campus is located in an area characterized by its desert-type landscape and remains mostly undeveloped. However, the few nearby developments found along U.S. Hwy. 57 are predominantly commercial and industrial uses focused on road freight transport.

The Maverick County Canal runs adjacent to the western property line and provides irrigation water for agricultural production in the region.



Map 3. Location & Surrounding Context Map

Scale: N.T.S. N

SITE ACCESS & CONNECTIONS

The SRSU Eagle Pass campus is located approximately 1 mile northwest of the U.S. Hwy. 57/Loop 480 intersection. TxDOT and local jurisdictions are proposing several road and highway extensions that would provide access to the campus. These proposals include a new road that would run along the eastern edge of the property and connect from the existing U.S. Hwy. 57 to the extension of Crown Ridge Boulevard along the northern edge of the property. Crown Ridge Boulevard would then connect westward to Eagle Pass and eastward to the proposed Loop 480 extension.

The SRSU Eagle Pass campus is poised for transformation with proposed road and highway extensions set to improve its accessibility. A significant public investment is foreseen for these projects and will require close coordination between SRSU, local authorities and stakeholders. It is most likely that the road along the eastern border of the property will be built first. Therefore, the Master Plan should prioritize primary access points along this road.

Since on-campus housing will not be offered during the initial phases of development, all students will be commuting to campus. Partnerships with local transit agencies could be explored to facilitate viable commuting options for students.

Wayfinding signage will be critical to directing people to campus. Since the campus is set back from the nearby highways, wayfinding signage will be particularly important along U.S. Hwy. 57 and Loop 480 for effective navigation to the campus.

New road off U.S. Hwy. 57 that runs south of the planned campus site

Map 4. Site Access & Connections Map

Scale: N.T.S. N

SOILS, SUN AND WIND

Site soils have been identified utilizing the WebSoil Survey produced by the USDA Natural Resources Conservation Service (NRCS). NRCS mapping indicates that the primary site soils are Pryor Clay Loam (PrA), Maverick Association (MKC), and Catarina Clay (CAB). These soil classes are moderately well drained and part of Hydrologic Groups C and D with low infiltration rates.

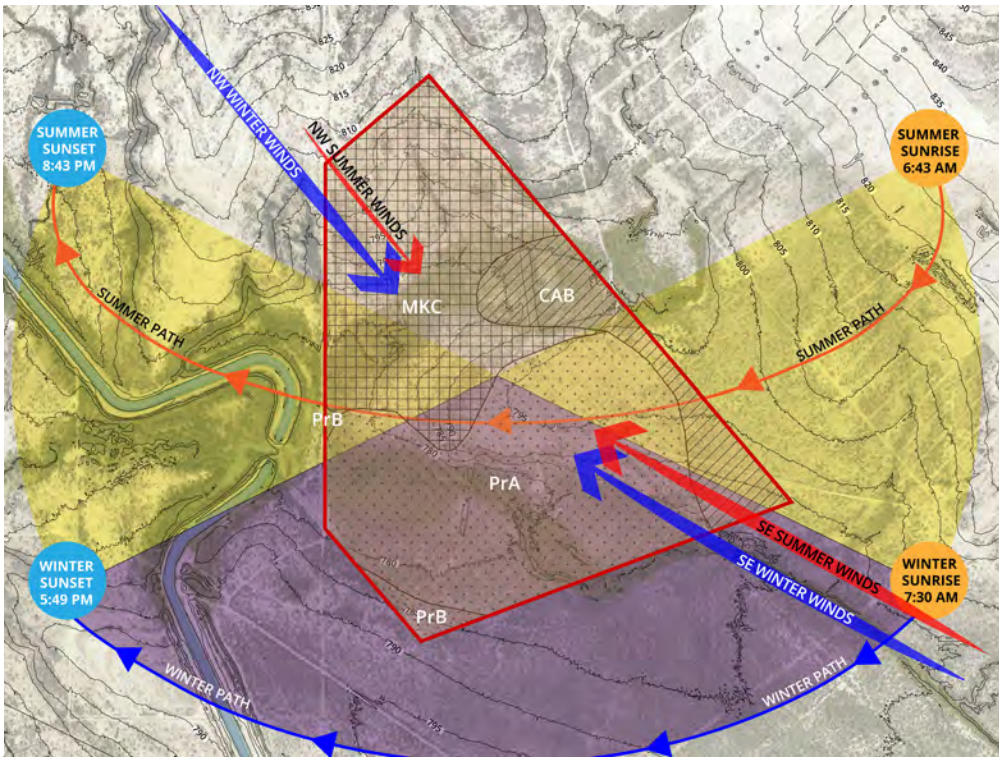
Wind data collected through the Automated Surface Observing Systems (ASOS), the nation's primary surface weather observing network, indicates that prevailing winds blow from the southeast and northwest. In the hot summer months, these winds could help provide air circulation in outdoor spaces.

Sun path models indicate that during the summer months, the region receives sunlight at a higher angle and for longer durations than in winter months. The sun path models help inform building orientation, which can influence a building's exposure to direct solar radiation. With minimal existing areas of natural shade on the property, providing outdoor shade (e.g., structures, trees) will be important.

SLOPES AND DRAINAGE

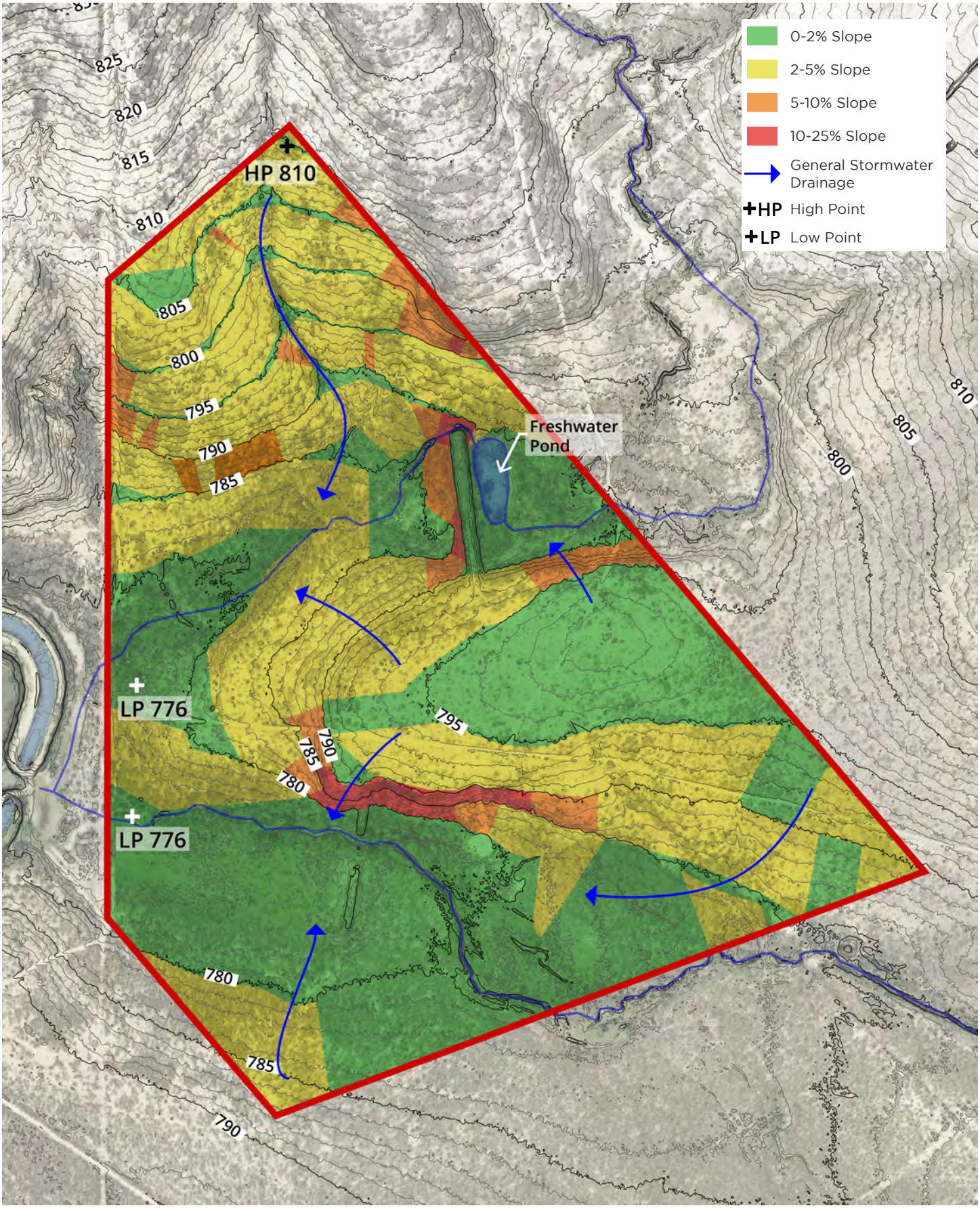
The site is undeveloped land that slopes inward to two unnamed tributaries of the Rio Grande. The tributaries converge at the western property line, where they cross over the Maverick County Canal, which runs adjacent to the western property line. There are no floodplains or floodway on or near the project site. A small freshwater pond with variable water level is present along the northern tributary, near the northeast property line. Runoff from the site is conveyed by overland flow to the two tributaries which eventually discharge into the Rio Grande River.

The majority of slopes across the site range between 1% and 5% and stormwater flows generally from the east to the west. Slopes under 5% are ideal for developing buildings, parking lots and pedestrian circulation. Slopes between 5% and 10% can be built on, but will require additional site grading. Areas with slopes over 10% should be avoided for development, as much as possible.



Map 5. Soils, Sun and Wind Map

Scale: N.T.S.



Map 6. Slopes and Drainage Map

Scale: N.T.S.

EXISTING UTILITIES

MECHANICAL & PLUMBING

HVAC

Currently, there are no existing heating, ventilation and air conditioning (HVAC) utilities or infrastructure in place at the site. All HVAC related infrastructure will be developed in phases as required for the buildout of the campus.

NATURAL GAS

A natural gas main on the west side of the project site serves as a crucial energy source for the area. This infrastructure ensures a reliable and convenient supply of natural gas, and will help to support various needs of the campus.

DOMESTIC WATER

A 12-inch water main, situated approximately 3,300 feet to the southeast of the site within the highway easement, plays a vital role in the water supply infrastructure. This main will serve as a key conduit for providing clean and potable water to the campus.

SANITARY SEWER

While there is no existing sanitary sewer on the project site, an established lift station is located approximately 3,000 feet southwest of the campus which will provide a solution for wastewater management. Other buildings in the vicinity rely on septic systems for their sanitary sewer needs but this is not recommended due to the size of the campus development.

These mechanical and plumbing utility features in the area will collectively contribute to the overall functionality and sustainability of the project site, and will help to provide essential services for near- and long-term development.

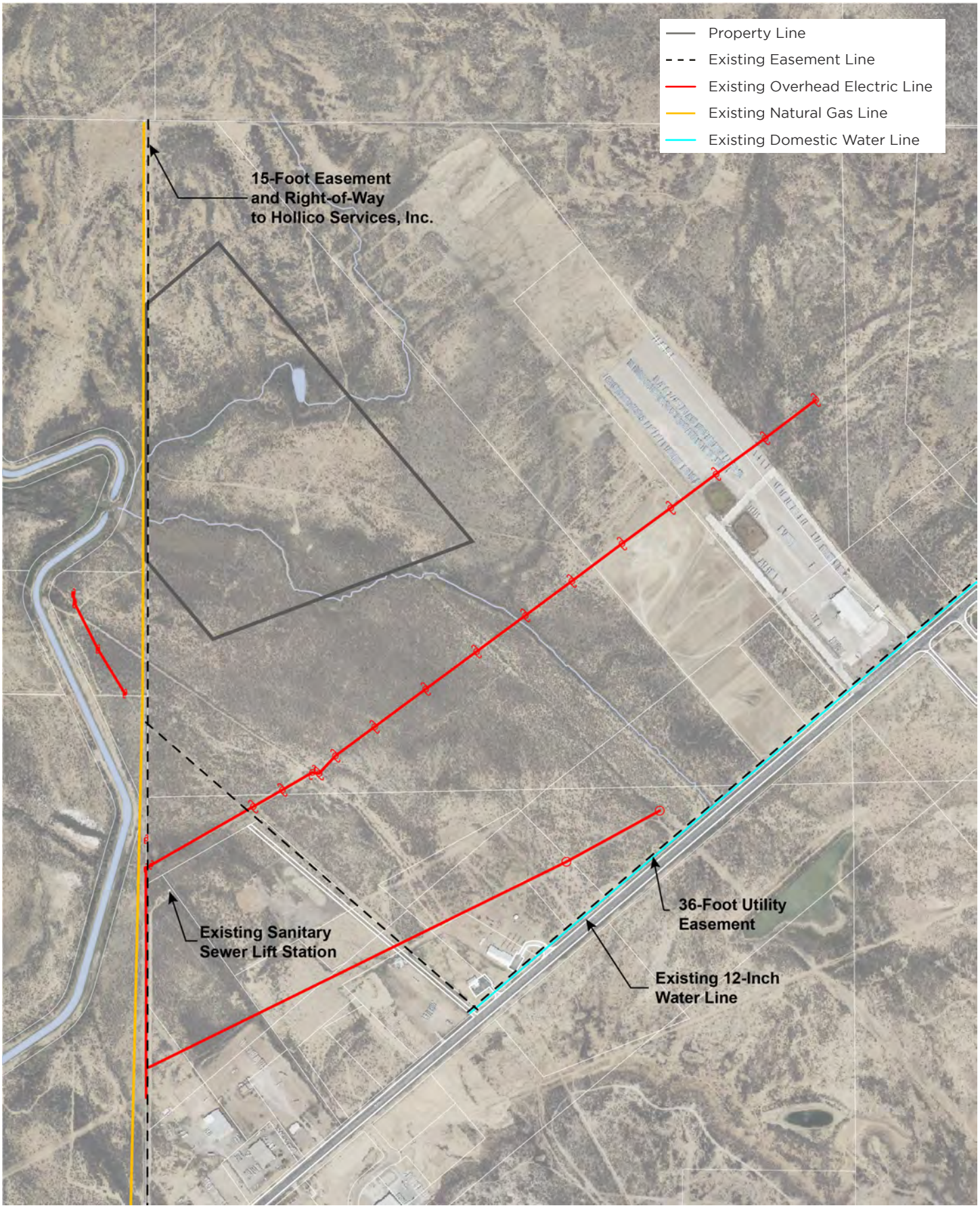
ELECTRICAL

There are no existing electrical utilities within the property. The nearest overhead electrical lines are located south and west of the property.

While the boundary survey completed for this site showed a Central Power and Light Company easement running through the property, the planning team has confirmed with American Electric Power company (AEP) that the easement line can be removed from the survey map (thus it is not illustrated on Map 7). A right-of-way agent from AEP confirmed that their maps do not show distribution or transmission line easements along this route.

STORMWATER

There are no existing stormwater utilities on the property. The site's natural drainage patterns are described on the previous two pages.



Map 7. Existing Utilities Map

Scale: N.T.S. N

DEVELOPMENT OPPORTUNITIES & CHALLENGES

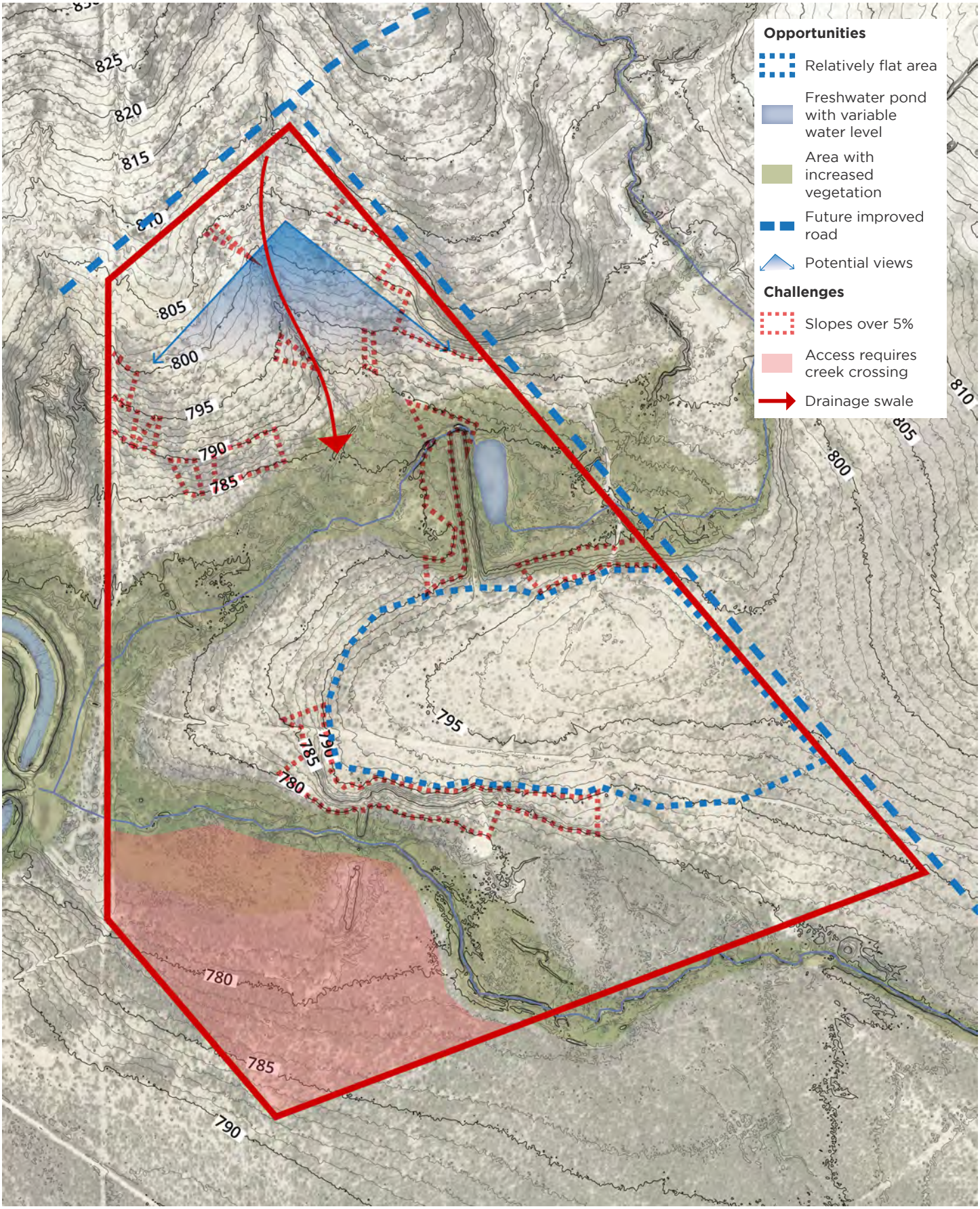
Based on the previous analysis and input received from stakeholders, faculty and staff, there are key opportunities and challenges to consider at the new SRSU Eagle Pass campus.

KEY OPPORTUNITIES

- A large, relatively flat area lies adjacent to the location of a future road and provides an ideal area for a first building and associated parking lots.
- The freshwater pond and tributaries can be preserved and incorporated into the design of the campus as natural landscape features that provide character and a sense of place. Best management practices should be used to prevent impacts to the waterbodies.
- While vegetation on this site is sporadic, there are areas with denser vegetation along the tributaries and around the freshwater pond. Similar to the waterbodies, these areas can be preserved and enhanced to the extent possible and add to the aesthetic of the campus.
- The north end of the project area sits at a higher elevation than the rest of the site and provides a scenic viewshed to the south.

KEY CHALLENGES

- While most of the site is gently sloping, areas with slopes over 5% will require additional grading during construction. Based on the scale of development planned for the campus, some development in these areas will be unavoidable. However, developing outside of these areas should be prioritized.
- A natural swale runs from the northern corner of the property towards the stream. To the extent possible, this drainage pattern should be preserved and can even be enhanced as a site amenity where it traverses the developed campus area.
- One of the tributaries cuts across the southern corner of the site and effectively makes the southwest corner of the site only accessible via a crossing structure. However, the area south of the creek is relatively flat and could provide a suitable location for athletic and recreation facilities, if desired.



Map 8. Development Opportunities & Challenges Map

Scale: N.T.S. N

RECOMMENDATIONS & PHASING

GROWTH IN THE RIO GRANDE

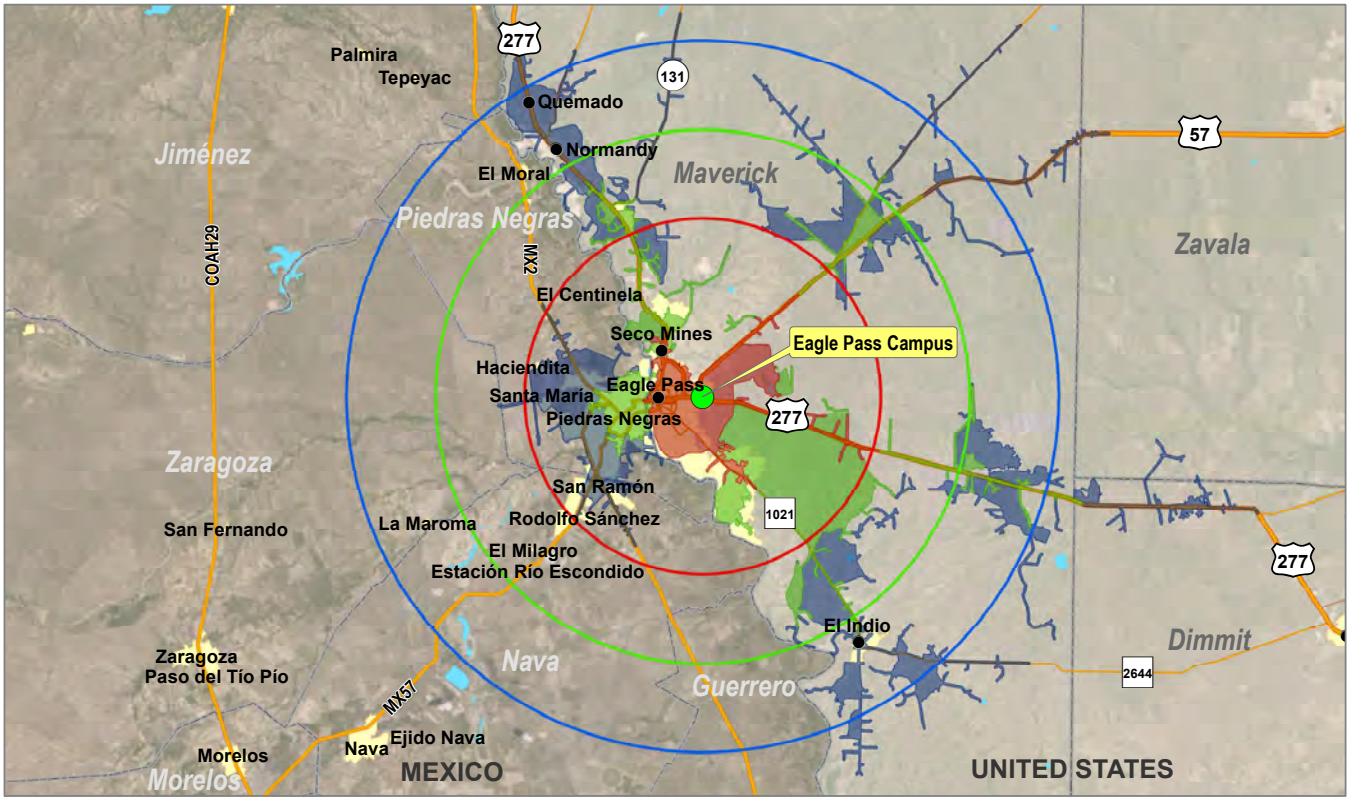
The West Texas job market offers the opportunity for growth in several academic programs SRSU currently offers as well as potential opportunities for new program development. This specifically applies to the Middle Rio Grande and its close proximity to Mexico and its emerging markets.

Based on an analysis of West Texas, review of Texas bachelor degree completions throughout the state, and labor market projections and trends, Hanover Research recommended several programs and degrees at various levels which they see as appropriate for development in the Middle Rio Grande.

The future campus location in Eagle Pass also creates the opportunity to provide further educational services for the population of the Middle Rio Grande and young adults just across the border of Mexico looking for an in-person university education.

A partnership with the City of Eagle Pass and special financial designation from the Texas Legislature is providing the funding for an initial building to start a standalone residential campus to serve this area.

The map below provides a visual reference of the realistic drive times and distances most students are willing to travel on a day-to-day basis to attend in-person courses in higher education. The extent of the 20-mile radius and 30-minute travel distance illustrated below will most likely identify the area of residence for the on-campus students for the first several years until enrollment growth allows SRSU to provide on-campus housing.



Legend

0 5 10 Miles

Source: ESRI and Facility Programming and Consulting

Mile Radii Distances
- 10 Miles
- 15 Miles
- 20 Miles

Drive-Times to Campus
- 10 Minutes
- 20 Minutes
- 30 Minutes

FACILITY PROGRAMMING AND CONSULTING

Map 9. Mile Radii Distances and Typical Drive-Times to Eagle Pass Campus

TARGET ENROLLMENT

Discussions with SRSU leadership regarding the development of the standalone campus and its capacity provided an overall Master Plan direction of a target enrollment of 10,000 students at full buildout. Looking at the population within the nearby communities that the campus will aim to serve in relation to other nearby educational opportunities, a campus buildout of 10,000 students was proposed as a multi-decade plan.

This Master Plan proposes the full campus buildout to be completed in four phases. Speed of enrollment growth, development of additional on-campus undergraduate programs, student retention, and additional funding may all impact the phasing as the campus moves forward.

Based on the current available funds provided by the legislature for the development of the campus, the first phase is projected to be constructed as Phase 1A and Phase 1B.

The Texas Higher Education Coordinating Board (THECB) provides a formula for projecting space needs for new and existing campuses based on enrollment, staff, faculty and anticipated programs. These numbers are a guideline and are campus-dependent based on the number of undergraduate students versus graduate students and on-campus versus online students. Further explanation of the method and its calculations are provided on the following page.

The following gross square footage and parking counts are recommended for each phase of the project based on the THECB guidelines and the projected student population.

PHASE 1

*Supports 2,500 students and a target of 145,187 assignable square feet (ASF) of space**

- **PHASE 1A - INITIAL BUILDING CAMPUS IN A BOX**
  - 40,000 GSF of building spaces
  - Approximately 350 parking spaces
- **PHASE 1B - ACADEMIC GROWTH**
  - Additional 70,000 GSF of building spaces
  - Additional approximately 530 parking spaces

PHASE 2

*Supports 5,000 students and a target of 290,375 ASF of space**

- Additional 165,000 GSF of building spaces
- Additional approximately 875 parking spaces

PHASE 3

*Supports 7,500 students and a target of 427,280 ASF of space**

- Additional 155,000 GSF of building spaces
- Additional approximately 840 parking spaces

PHASE 4

*Supports 10,000 students and a target of 551,540 ASF of space**

- Additional 225,000 GSF of building spaces
- Additional approximately 975 parking spaces

**Note the THECB model target numbers discussed here do not include housing and therefore, the GSF of the Housing and Commons/Dining Buildings described on the following pages are not included in the total GSF space calculations for space needs.*

ACADEMIC FIVE-FACTOR MODEL

The current SRSU facility in Eagle Pass utilizes space on the Southwest Texas Junior College Campus. SRSU occupies one existing building on the Junior College campus. This Master Plan, which develops a full-scale campus for 10,000 students over the course of several decades, will provide a permanent home in Eagle Pass for a new four-year SRSU Eagle Pass campus.

To help higher education institutions better project and manage space needs, the THECB has created the Academic Five-Factor Model to help with space planning. This model was utilized to develop the overall required square footage by category for the SRSU Eagle Pass campus.

The Five-Factor Model, as published by the THECB in 2005, projects the Educational and General (E&G) space required for a public university, technical college or state college needed to fulfill its mission of teaching, research and public service. Campuses are also comprised of other spaces such as dormitories, bookstores, intercollegiate athletics or other auxiliary enterprises that are not included in the space model calculations.

The base unit of the model's factors are room types which are grouped into the five space categories in the model and are associated with the specific data that drive each particular type of space.

FACTOR 1: TEACHING SPACE

Teaching space includes rooms used for instruction and are represented in the institution's facilities inventory by room type. The following room types are considered in this factor:

- 100: Classrooms
- 210-235: Class labs, special class labs and self-study labs
- 500: Physical education, demonstration, audiovisual and animal quarters
- 600: Assembly, exhibition, lounge, meeting rooms and locker rooms

FACTOR 2: LIBRARY SPACE

Library space includes all room type 400s (reading/study rooms, stack space and associated service areas) and all room type 300s with a 41 (library) usage code. Library space is calculated primarily using the Association of College and Research Libraries (ACRL) standards for college libraries.

FACTOR 3: RESEARCH SPACE

Research space includes all non-class (research) laboratories and service rooms (room type 250 and 255). Predicted research space is determined using one of two methods, depending on which method yields the greatest net assignable square foot (NASF) prediction.

FACTOR 4: OFFICE SPACE

Office space includes all offices, conference rooms and associated service areas (room type 300s). Type 300 rooms reported with a 41 (library) usage code used in the library factor formula are omitted from the office space calculation to eliminate duplication. Predicted office space is determined using one of two methods, depending on which method yields the greatest NASF prediction.

FACTOR 5: SUPPORT SPACE

Support space is calculated at 9% of the sum of predicted space from the teaching, library, research and office factors. Support space includes all data processing/computer rooms, shops, storage, vehicle storage and associated service areas (room type 700s).

Due to the space model's multipliers and factors, each institution will have a slightly different targeted number of ASF to full time equivalent (FTE) students for their campus. A national ratio ranges from 90-130 ASF per one FTE student dependent on campus programs, services and research.

BUILDING 1 - MULTIPURPOSE ACADEMIC BUILDING
(41,000 GSF)

- Onboarding and welcome services*
- Instructional spaces
- *Small library component with study spaces
- Faculty offices
- Administrative spaces
- Vending services
- **With the addition of Buildings 3 and 4, library and onboarding move out and additional administrative offices and academic spaces move in*

BUILDING 2 - ACADEMIC/FACULTY OFFICE BUILDING
(70,000 GSF)

- General academic instruction
- Additional science labs
- Faculty office
- Student support spaces
- Study spaces
- Vending

BUILDING 3 - ONBOARDING/STUDENT SERVICES BUILDING
(45,000 GSF)

- Onboarding services with small Welcome Center component*
- Instructional spaces
- Student lounge
- "Hang out" space
- Food service component
- **With addition of Building 11, onboarding moves out and the building becomes standalone Student Center with lounge, study spaces and places to gather*

BUILDING 4 - ACADEMIC/LIBRARY BUILDING
(80,000 GSF)

- Library
- Instructional spaces
- Study areas
- Faculty offices

BUILDING 5 - CENTRAL PLANT
(10,000 GSF)

- Previously constructed buildings will be converted to tie in to the Central Plant and all future buildings will tie in to Central Plant at time of construction

BUILDING 6 - STUDENT WELLNESS CENTER
(40,000 GSF)

- Gymnasium
- Fitness equipment
- Yoga, etc.

BUILDING 7 - STUDENT HOUSING
(120,000 GSF)

- Housing for 400 students
- Four bedroom suites with shared restrooms and a common lounge area

BUILDING 8 - COMMONS/DINING FACILITY
(20,000 GSF)

- Dining facility for nearby housing
- Food service for other campus users
- Includes loading dock

BUILDING 9 - ADMINISTRATION BUILDING
(40,000 GSF)

- President and leadership offices
- Large conference and meeting spaces
- Faculty offices
- Auditorium
- Alumni office

BUILDING 10 - ACADEMIC BUILDING
(60,000 GSF)

- Instructional spaces
- Study areas
- Faculty offices

BUILDING 11 - ONBOARDING BUILDING/ WELCOME CENTER
(45,000 GSF)

- All onboarding services in a single location
- Testing center

BUILDING 12 - STUDENT HOUSING
(120,000 GSF)

- Housing for 400 students
- Four bedroom suites with shared restrooms and a common lounge area

BUILDING 13 - STUDENT HOUSING
(120,000 GSF)

- Housing for 400 students
- Four bedroom suites with shared restrooms and a common lounge area

BUILDING 14 - ACADEMIC HEALTH PROFESSIONS BUILDING
(75,000 GSF)

- Simulation spaces
- Skills lab
- Flexible lecture spaces
- General instructional areas

BUILDING 15 - ENGINEERING/ TECHNOLOGY BUILDING (100,000 GSF)

- Flexible open bays
- Skills spaces
- Instructional shops
- Instructional spaces

BUILDING 16 - ACADEMIC BUILDING (50,000 GSF)

- General instruction
- Student support
- Faculty spaces

BUILDING 17 - STUDENT HOUSING (120,000 GSF)

- Housing for 400 students
- Four bedroom suites with shared restrooms and a common lounge area

BUILDING 18 - STUDENT HOUSING (120,000 GSF)

- Housing for 400 students
- Four bedroom suites with shared restrooms and a common lounge area

BUILDING 19 – PARKING GARAGE + COMMONS/DINING FACILITY

- Dining facility for nearby housing and food service for other campus users in a portion (20,000 GSF) of the first floor of garage
- Loading dock/access to dining hall

MASTER PLAN OVERVIEW

The development of this Master Plan and recommendations for the SRSU Eagle Pass campus were based on a series of guiding principles that reflect SRSU's vision for the Eagle Pass campus.

- Establish a campus layout that harmonizes with nature.
- Promote a comfortable pedestrian experience.
- Foster and enhance outdoor experiences.
- Cultivate a welcoming environment.
- Plan for thoughtful and strategic phased growth.
- Solidify SRSU as an educational pillar of the region.

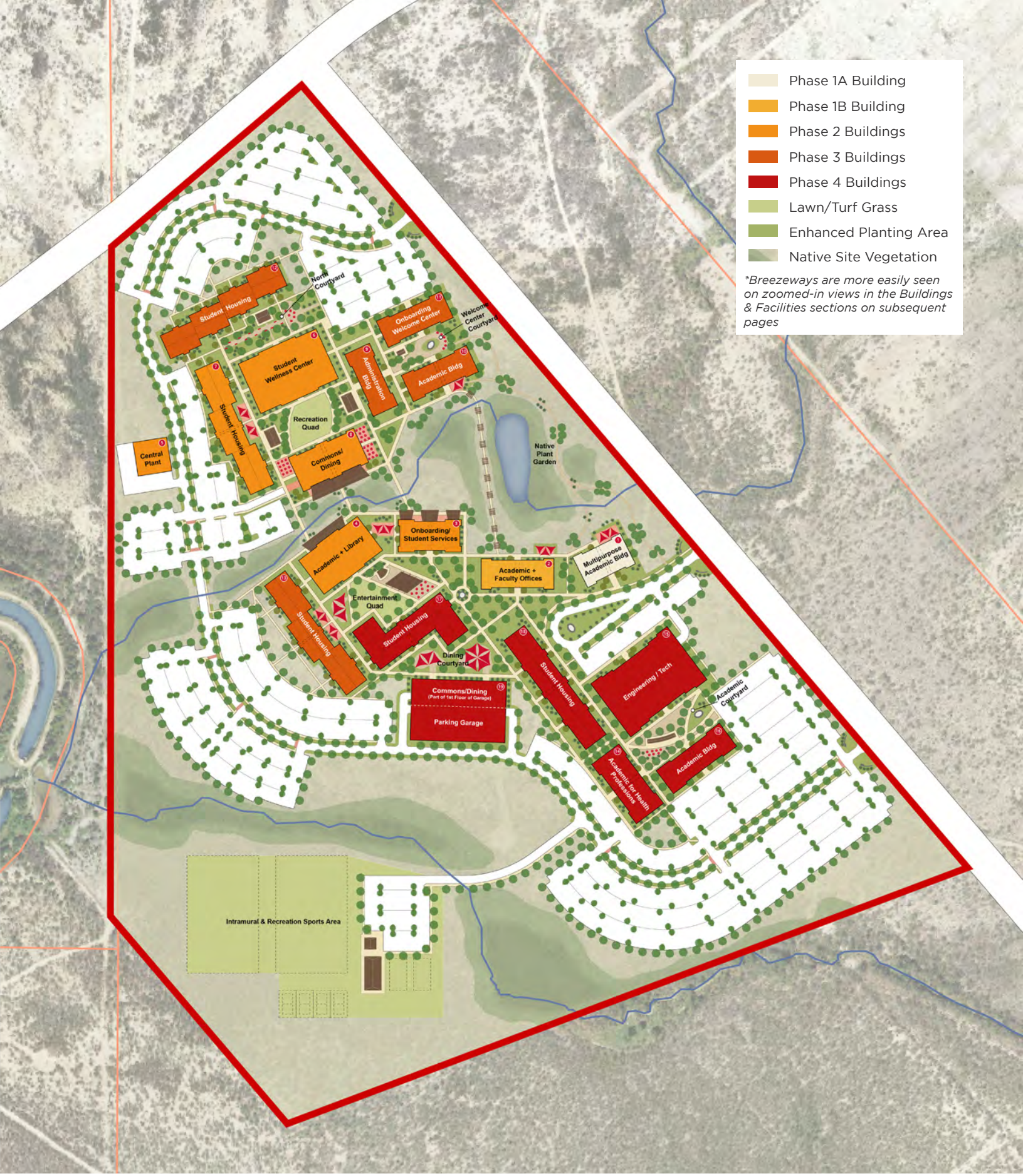
For this vision to be implemented now and in the future, the Master Plan should be followed, at least in terms of the guiding principles. The recommended campus layout and facilities will provide learning and social experiences for students, help promote premier programs and degrees, and provide opportunities to capture strong alumni ties and give back to the community.

SRSU has a rich history of providing educational opportunities to students and residents not only in the Big Bend region of far West Texas but also to those in the Rio Grande region of the state of Texas. In the 1970s, an off-campus study center was established on the campus of Southwest Texas Junior College in Uvalde to provide such opportunities for residents of the Uvalde, Del Rio and Eagle Pass areas to pursue upper-level and graduate work in teacher education and business administration.

Known as Rio Grande College (RGC), the Texas Legislature renamed RGC in 1995 to Sul Ross State University Rio Grande College, recognizing its service to the area of the Middle Rio Grande and Wintergarden regions. Today, SRSU has distance learning centers on the campuses of Southwest Texas Junior College in Uvalde, Del Rio and Eagle Pass, serving 13 counties in Southwest Texas.

With a desire to expand offerings beyond upper-level courses, the SRSU 2021 Campus Master Plan researched and explored the possibility of developing a larger presence in the Rio Grande region and made a recommendation for an independent SRSU facility that would include lower-level courses, helping to develop four-year degrees that do not currently exist today. The development of the Sul Ross State University Master Plan-Eagle Pass Campus is the first step in providing a complete higher education experience that will allow students to complete

Figure 5. Illustration of View from the First Building toward the Entertainment Quad



Map 10. SRSU Eagle Pass Campus Master Plan

Scale: N.T.S.

Figure 6. SRSU Eagle Pass Campus Aerial Illustration

their university career at one institution, from undergraduate to graduate level courses.

This Master Plan is unique in that it has been developed and designed on a 100-acre site that is currently undeveloped. The site, which is considered a blank slate, is a desert-like open space and has a variety of topographic slopes throughout. The site also has two unnamed tributaries and a small freshwater pond with variable water level that serves as a central feature in the campus development.

The Master Plan is designed to serve, at full buildout, an enrollment of 10,000 students and features four phases, with the initial phase being broken into two sub-phases. Phase 1A will include the campus's first facility that will serve as an all-inclusive academic and administration building and is to be constructed within the next few years. The first building sets the tone for the overall campus and establishes the architectural character that will be carried through all four development phases. Notably, the majority of buildings on campus are proposed to include breezeways that allow pedestrian circulation through the building to provide shade and reduce walking distances. Similarly, building arcades could also be employed for weather protection and pedestrian comfort. The 41,000 gross square foot (GSF), three-story building will provide outdoor gathering spaces that are replicated in other areas of the campus at buildout.

Phase 1B includes additional academic and administrative uses and faculty offices, helping to establish core and essential spaces needed for an institution to operate and function in a way that adequately serves students. Phase 2 begins to incorporate services and facilities that are student-centric, such as a dining facility, student wellness center, library and student housing for 400 students. Phase 2 also establishes a central plant, helping to serve the campus, which will stand at eight facilities at the conclusion of Phase 2.

In Phase 3, student housing is increased by 800 students and anchors the northwest portion of the site with an Onboarding Building/Welcome Center and administrative and academic facilities. Meanwhile, Phase 4 builds out the southern portion of the site with academic facilities, student housing and a dining facility incorporated into a four-level parking garage. At full buildout, parking areas are located on the outer edges of the campus, with an access road that connects the entire campus.

While these phases have been laid out in the most logical campus development, based on funding and other physical constraints, phases could vary in how they are ultimately constructed and developed; however, this Master Plan will serve as the overall guide for the SRSU Eagle Pass campus development.

PHASE 1A

TARGET ENROLLMENT: 1,200-2,000

INTRODUCTION

As previously mentioned, Phase 1 is broken into two sub-phases based on the current available funding. Phase 1A initiates development near the relatively flat area in the east central part of the property. The goal of this phase is to create a standalone campus with all facilities that students and faculty would need for the first few years of the campus's operations focused in one Multipurpose Academic Building.

Map 11 illustrates the building location and approximate areas of parking, pedestrian space and circulation that would be built with this phase.

The target enrollment for Phase 1A is 1,200 to 2,000 students. On-campus offerings in Phase 1A can support up to 1,200 students with additional online enrollment potentially increasing the total to 2,000 students.

Map 11. Phase 1A Diagram

Scale: N.T.S.

Figure 7. Multipurpose Academic Building Illustration

BUILDINGS & FACILITIES

BUILDING 1 - MULTIPURPOSE ACADEMIC BUILDING

This facility is a three-story, 41,000 GSF building. This building will function as the sole building on campus for the first few years and must serve a multitude of functions including instructional, administrative and faculty spaces; onboarding and welcome services; and a small library component. As additional buildings are developed in later phases, the library and onboarding services will move out and this facility will convert to an academic and administrative building. An outdoor gathering area is situated on the north side of the building. This area could include enhanced paving, seating, shade sails or other shade structure, and perimeter plantings.

TRANSPORTATION & LANDSCAPE

IN-OUT LOOPING ENTRY ROAD WITH ENTRY MONUMENT SIGNAGE

An in-out looping entry road will provide the sole campus access for Phase 1. An entry monument sign with associated landscaping and streetscape elements along the road such as lighting, plantings and sculptural elements will set the aesthetic character for the rest of the campus development. It is recommended that the monument sign have both vertical and horizontal elements for increased visibility.

PARKING (SEE MAP 11 ON PAGE 41)

Phase 1A should include parking for approximately 350 vehicles. Much of this parking area will convert to other uses by the time the campus is built out.

PHASE 1B

TARGET ENROLLMENT: 2,500

INTRODUCTION

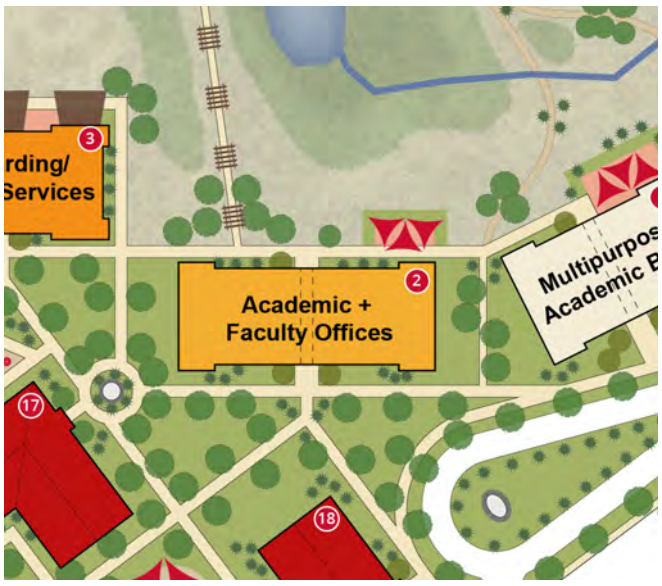
Phase 1B adds one additional building to the campus, providing additional academic and faculty spaces. Map 12 illustrates the building location and approximate areas of parking, pedestrian space and circulation that would be built or modified with this phase.

The target enrollment for Phase 1B increases to 2,500 students. Similar to Phase 1A, a notable percentage of these students may still include online enrollment while the on-campus offerings remain limited.

BUILDINGS & FACILITIES

BUILDING 2 - ACADEMIC/FACULTY OFFICE BUILDING

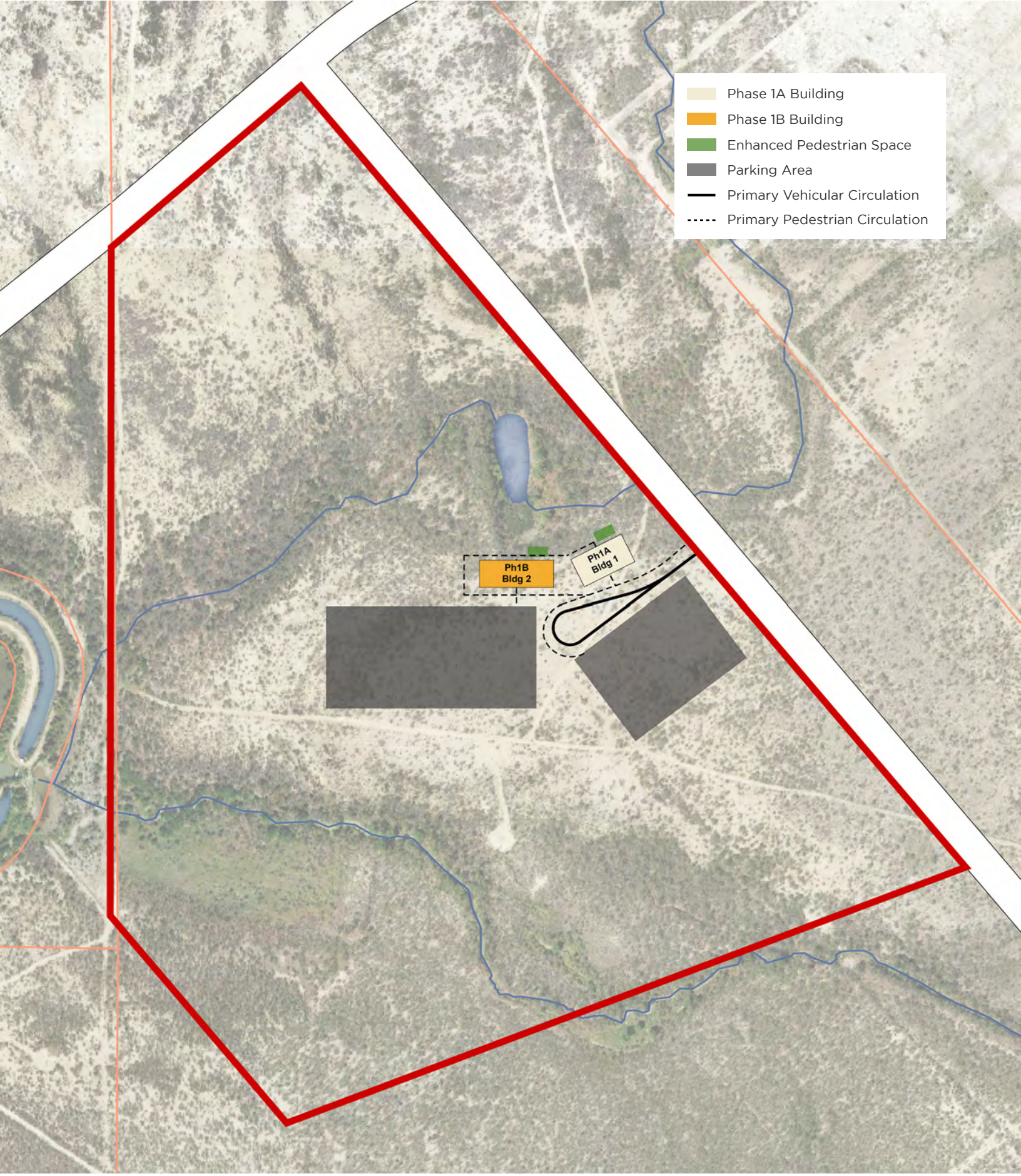
This four-story, 70,000 GSF building will include general instruction spaces, science labs and faculty offices, and student support spaces. An outdoor gathering area with shaded seating and enhanced plantings is located on the north side of the building, where the area can receive maximum shade from the building itself. This area will ultimately have views toward the Native Plant Garden and freshwater pond to the north.



TRANSPORTATION & LANDSCAPE

PARKING (SEE MAP 12)

Parking should be expanded by 530 spaces in this phase. However, this expansion area will convert to other uses by Phase 4.



Map 12. Phase 1B Diagram

Scale: N.T.S.

PHASE 2

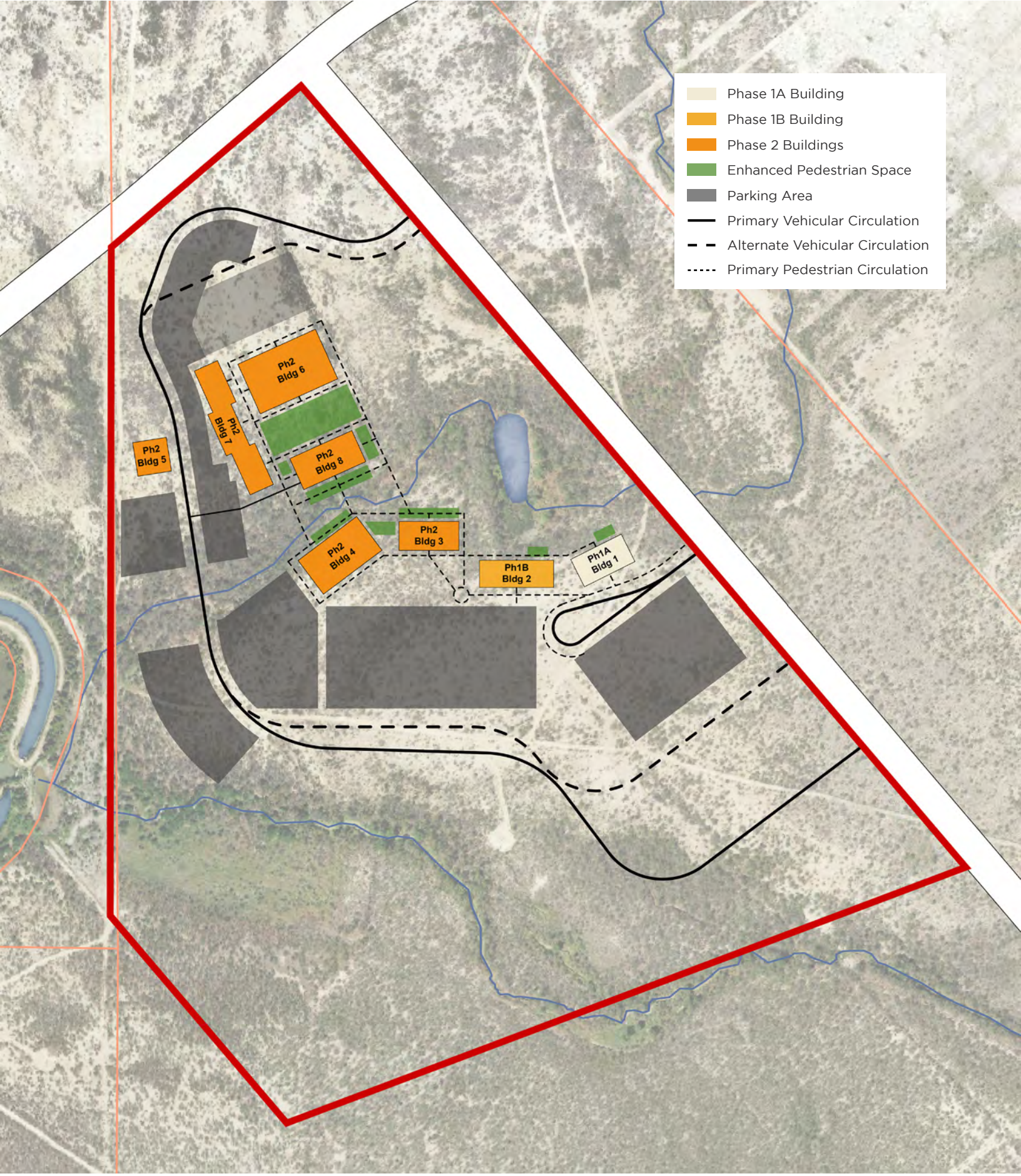
TARGET ENROLLMENT: 5,000

INTRODUCTION

Phase 2 substantially increases the developed area of the property and aims to double student enrollment. This phase begins to develop the northern part of the property, with accessible areas now crossing the creek running through the center of the site. Phase 2 incorporates services and facilities that expand the student experiences on campus such as a wellness center, library, dining facility and housing for 400 students. A central plant is developed and previously constructed facilities will be converted to connect to the plant. This phase also includes the first substantial outdoor recreation and gathering space in the Recreation Quad.

Map 13 illustrates the building locations and approximate areas of parking, pedestrian space and circulation that would be built or modified with this phase.

The target enrollment for Phase 2 increases to 5,000 students. At this point, a greater percentage of student enrollment may start to shift on-campus as the learning, living and recreation options increase.



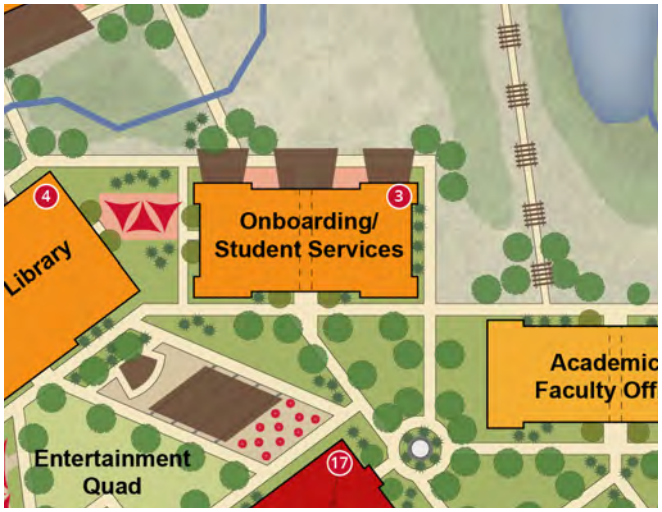
Map 13. Phase 2 Diagram

Scale: N.T.S. N

BUILDINGS & FACILITIES

BUILDING 3 - ONBOARDING/STUDENT SERVICES BUILDING

The Onboarding/Student Services Building is a three-story, 45,000 GSF building. It will include onboarding services and a small welcome center component, instructional spaces, a food service component, and student spaces such as lounge and hang out areas. With the addition of a standalone Onboarding Building/Welcome Center in Phase 3, this building will transition to a dedicated Student Center and serve as a primary student gathering and recreation area south of the creek. Considering the long-term student-centric use, this building has a more substantial outdoor seating area with shade structure or cantilevered canopy over an area with enhanced paving, seating and plantings.

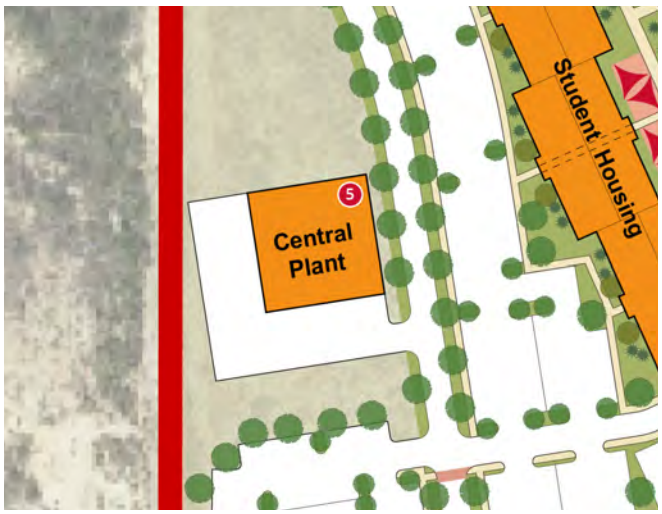


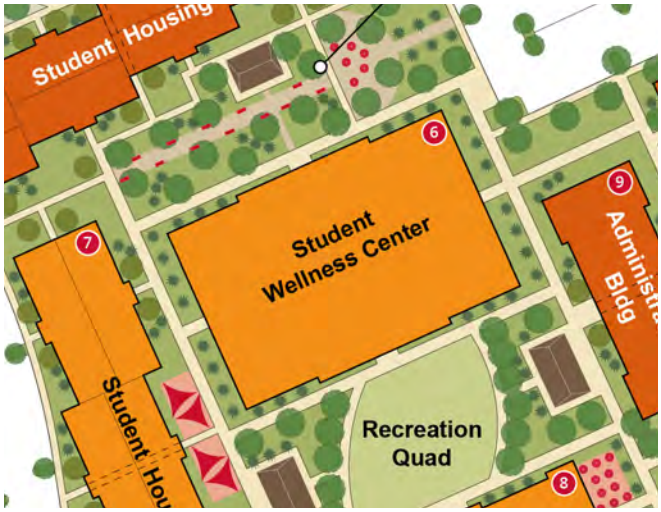
BUILDING 4 - ACADEMIC/LIBRARY BUILDING

This three-story, 80,000 GSF building is proposed as a multi-use facility including a library, instructional spaces, faculty offices and student study areas. A large outdoor seating area with shade structure or cantilevered canopy, seating, and planting is located on the northwest side of the building with direct views toward the creek and the outdoor seating area at the Commons/Dining Facility. A smaller, shaded seating area suitable for more quiet outdoor uses is situated between this building and the Onboarding/Student Services Building.

BUILDING 5 - CENTRAL PLANT

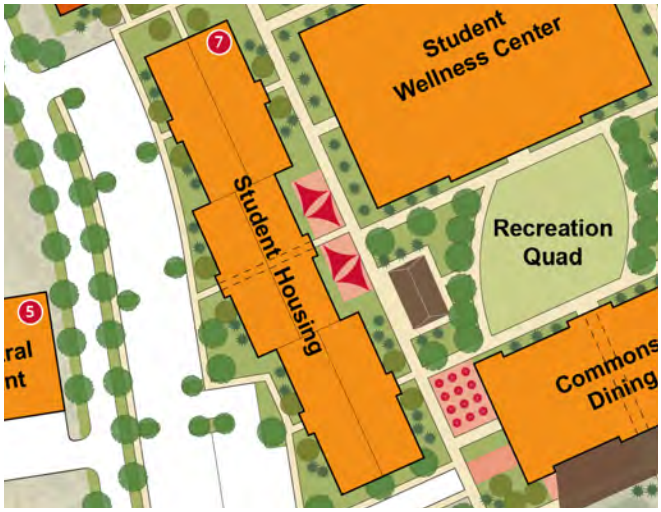
A one-story, 10,000 GSF Central Plant will be located on the west side of the loop road and will function as the heart of utility infrastructure on campus. An area for staff parking, outdoor storage, cooling towers, etc. is available around the facility. Buildings developed prior to the Central Plant will be converted to connect to the facility while all future buildings should tie into the Central Plant and piping network at the time of construction.





BUILDING 6 - STUDENT WELLNESS CENTER

The Student Wellness Center is a one-story, 40,000 GSF recreation facility. It will include amenities such as a gymnasium, fitness equipment area and exercise studios. This building will serve as a primary student gathering and recreation area north of the creek.



BUILDING 7 - STUDENT HOUSING

This is the initial Student Housing building on campus. It is a four-story, 120,000 GSF building intended to house 400 students. The building will include individual suites with four bedrooms, shared bathrooms and a common lounge area. A small shaded outdoor gathering area is located on the east side of the building. This building is sited largely perpendicular to the slope and will thus step down the slope at key intervals.

All future housing buildings will have the same capacity and residential options.

BUILDING 8 - COMMONS/DINING FACILITY

A one-story, 20,000 GSF Commons/Dining Facility will provide dining options for nearby residential students as well as non-residential campus attendees. A multitude of outdoor seating areas are located around the building including tables with umbrellas on the east and west side of the building and an area with shade structure or cantilevered canopy on the south side. The seating area on the south will not benefit from shade by the building itself, so providing a dense shade structure will help this space feel most comfortable. A loading dock is located on the west end of the building, with vehicular access through the adjacent parking lot.

TRANSPORTATION & LANDSCAPE

FULL OR SHORTENED LOOP ROAD

This phase includes the addition of the campus loop road. The road could either be developed in full (the solid black line on diagram below) or developed as a shortened route (the dashed black line on diagram below). However, if a shortened route is developed, entry monument signs will need to be relocated once the full loop is built later.

PARKING (SEE DIAGRAM ABOVE)

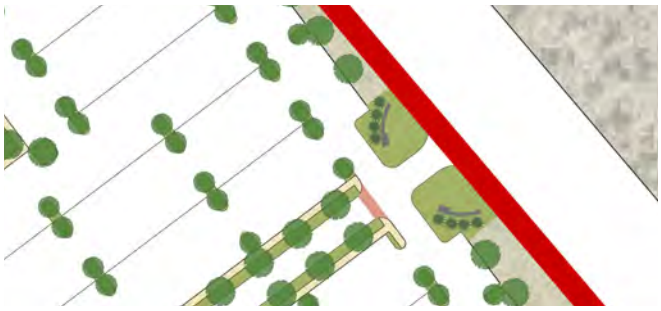
Parking should be expanded by 875 spaces in this phase. While some of the parking developed in this phase will convert to other uses later, the majority will remain as is. If a shortened loop route is built, the northernmost parking lot would need to be shifted accordingly.

Figure 8. Recreation Quad with Student Wellness Center Illustration

ADDITIONAL ENTRY MONUMENTS

With the development of the loop road, entry monuments should be built at each additional campus entry. Monument materials should be complementary to the architectural character of the campus buildings. Native, drought tolerant plants with a pop of color and/or strong structure (e.g., agave) can help to create a compelling entry and offer a first glimpse of the landscape character that users will experience on the campus.

North entrance



South entrance

RECREATION QUAD

The Recreation Quad is situated just south of the Student Wellness Center and is surrounded by administrative, housing, recreation and dining uses. It includes a central open area for flexible recreation; one of only two areas on campus where irrigated turf grass is recommended. Shade pavilions with seating anchor the east and west ends of the quad. There are views into the quad from adjacent sidewalks as well as through breezeways in three of the four adjacent buildings. An area with enhanced plantings provides a buffer between the shade pavilions and open recreation space.

Enhanced planting areas on campus will likely include areas with native trees, shrubs and groundcovers set amidst non-vegetative surfacing such as gravel or decomposed granite. This will help to maintain aesthetic appeal while reducing water needs.

PHASE 3

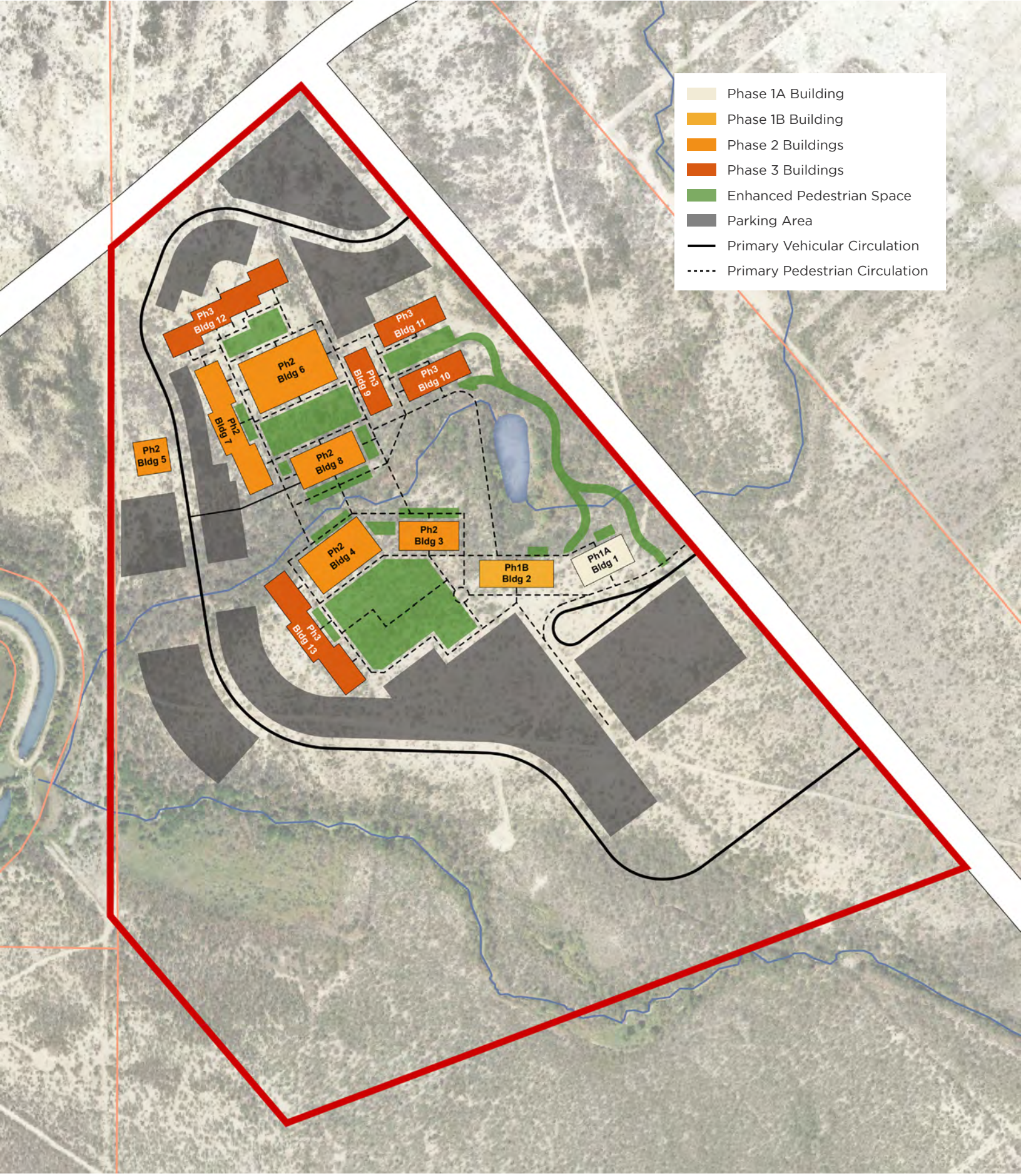
TARGET ENROLLMENT: 7,500

INTRODUCTION

Phase 3 increases on-campus housing by an additional 800 beds. New buildings including an Onboarding Building/Welcome Center, Administration Building and Academic Building anchor the northwest portion of the site near the north entrance. Additional student housing is developed south of the creek, beginning to expand the residential areas of campus. Four additional focused areas of green space are developed in the North Courtyard, Welcome Center Courtyard, Entertainment Quad and Native Plant Garden.

Map 14 illustrates the building locations and approximate areas of parking, pedestrian space and circulation that would be built or modified with this phase.

The target enrollment for Phase 3 increases to 7,500 students.



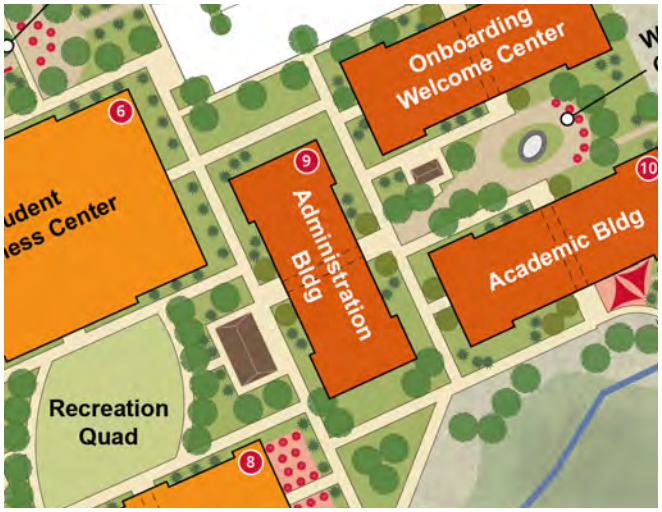
Map 14. Phase 3 Diagram

Scale: N.T.S.

BUILDINGS & FACILITIES

BUILDING 9 - ADMINISTRATION BUILDING

The Administration Building is a three-story, 40,000 GSF facility. It will include offices for the President, leadership and some faculty, as well as an alumni office, multipurpose auditorium and large conference meeting spaces. This building borders the Welcome Center Courtyard that includes shaded seating and outdoor gathering areas.

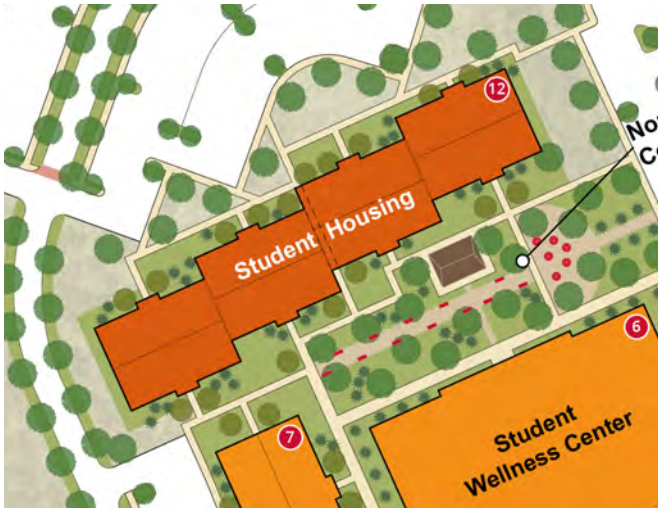


BUILDING 10 - ACADEMIC BUILDING

The Academic Building is a four-story, 60,000 GSF facility with instructional spaces, study areas and faculty offices. This is the first purely academic building to be built on campus. It is situated adjacent to the Welcome Center Courtyard and also includes a small shaded outdoor seating area on the south side of the building facing the freshwater pond.

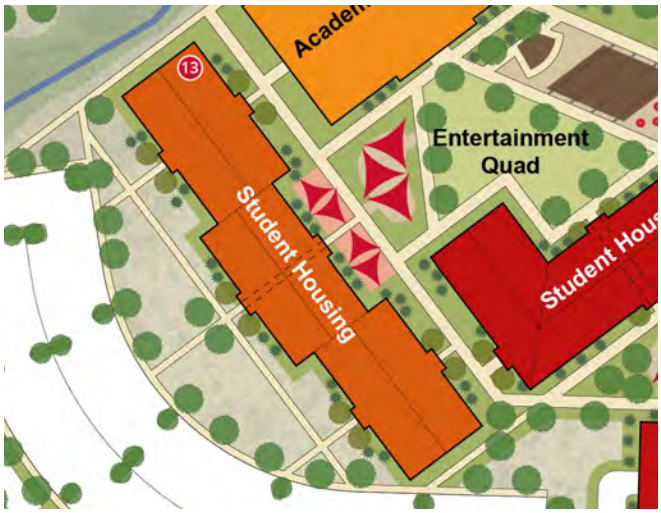
BUILDING 11 - ONBOARDING BUILDING/ WELCOME CENTER

The Onboarding Building/Welcome Center is a three-story, 45,000 GSF building prominently located at the northernmost entrance to the campus. This facility will consolidate all onboarding services, including a testing center, into a single dedicated facility. The adjacent parking area should include some visitor parking as this will be the first stop for many potential students and their families when they visit the campus. The breezeway through the building provides enticing views between the parking area and the Welcome Center Courtyard.



BUILDING 12 - STUDENT HOUSING

The second Student Housing building is another four-story, 120,000 GSF building intended to house 400 students. The building will include individual suites with four bedrooms, shared bathrooms and a common lounge area. The building is located along the northern slope of the property from which there are nice views of the site. The North Courtyard is situated on the south side of the building and provides a welcoming outdoor space for students to gather or enjoy alone.



BUILDING 13 - STUDENT HOUSING

The third Student Housing building is located south of the creek near the Academic/Library Building. As another four-story, 120,000 GSF building, it will accommodate 400 students in individual suites with four bedrooms, shared bathrooms and a common lounge area. A small outdoor gathering area with shaded seating is located on the east side of the building. This area is also adjacent to the Entertainment Quad where there will be additional opportunities for flexible recreation and shaded seating.

TRANSPORTATION & LANDSCAPE

FULL LOOP ROAD

If a shortened route of the loop road is developed during Phase 2, the full loop road will need to be built during Phase 3. This would include relocating the entry monuments, as needed.

PARKING (SEE DIAGRAM AT RIGHT)

Parking should be expanded by 840 spaces in this phase. The northern parking lots developed in this phase will remain while the southern parking lot will be modified in Phase 4.

NORTH COURTYARD

The North Courtyard provides opportunities for outdoor seating, studying and other gathering for nearby residential students. A shade pavilion is centrally located in the space and is situated just north of a wide decomposed granite pedestrian walkway with bench seating. Tables with umbrellas are located in a decomposed granite space at the east end of the courtyard. Trees and enhanced plantings provide a natural respite for students to relax and unwind.

WELCOME CENTER COURTYARD

The Welcome Center Courtyard is surrounded by academic, administrative and visitor-focused uses. A small shade pavilion is located along the northern sidewalk. A decomposed granite pedestrian area includes tables with umbrellas and access to the Native Plant Garden at the east end, and a sculptural element in the center. Enhanced plantings surround the space. Views from the visitor parking area north of the Onboarding Building/Welcome Center will be directed through the breezeway toward the sculptural element in the center of the courtyard. This is a great location for a "wow" moment created by the sculpture and adjacent plantings.

NATIVE PLANT GARDEN

The existing freshwater pond is being preserved throughout development of the campus. A new Native Plant Garden with pedestrian path is recommended near the pond. The garden, path and pond will be prominently visible along the campus frontage.

The pedestrian path ultimately connects the Welcome Center Courtyard with the Multipurpose Academic Building and the central entrance to campus. This area is envisioned as a linear garden with enhanced native plantings focused around the pedestrian path.

The sidewalk developed on the west side of the pond is located on top of a naturally occurring berm. Trellises or other shade structures are located at intervals along the path to provide shade. If there is enough space to plant trees along the sidewalk on top of the embankment, it could be a viable shade solution as well.

Figure 9. Entertainment Quad Illustration

ENTERTAINMENT QUAD

This space is surrounded by residential, academic and student-oriented uses. The Entertainment Quad is envisioned as a multi-functional recreation and entertainment space. The west end of the quad includes a decomposed granite seating area with shade sails. A central lawn is the second recommended irrigated turf area on campus and provides flexible open space. The northeast end of the quad includes a decomposed granite amphitheater with a combination of seat walls and benches (see Figure 9 above). The southeast end of the amphitheater includes tables with umbrellas. The

central portion steps down in grade and has a large shade structure over it, and the northwest end (the low end of the amphitheater) includes a small stage. The amphitheater could be used by SRSU and/or other community organizations for special events, as well as daily use by students, faculty and staff.

During Phase 3, additional open green space will be located southeast of the Entertainment Quad (see Map 14 on page 53). This area can be moderately improved for pedestrian use, but will ultimately be converted to the location for Building 17. The level of investment and realistic implementation timing of Phase 4 should be considered accordingly.

PHASE 4

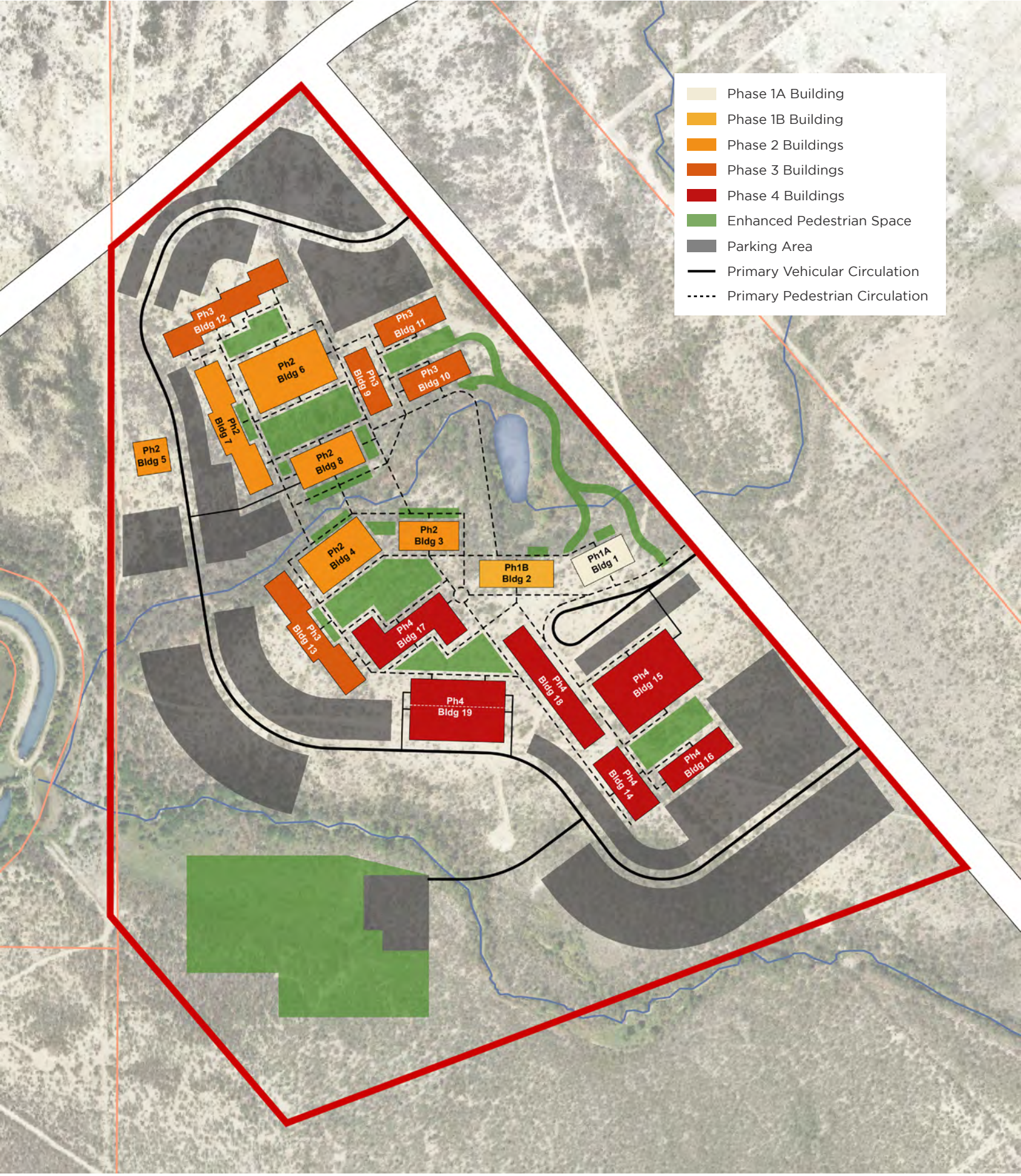
TARGET ENROLLMENT: 10,000

INTRODUCTION

The final phase, Phase 4, builds out the southern portion of the site with new academic facilities, an additional 800 beds in student housing, and a second dining facility incorporated into a four-level parking garage. A new sports area is developed in the southwest corner of the property and two new courtyard spaces are developed, the Dining Courtyard and Academic Courtyard. At full buildout, parking areas are located on the outer edges of the campus, with a loop road that connects the entire campus.

Map 15 illustrates the building locations and approximate areas of parking, pedestrian space and circulation that would be built or modified with this phase.

The target enrollment for Phase 4 hits campus buildout at 10,000 students. Enrollment is anticipated to be more substantially on-campus, with a lesser percentage remaining online.



Map 15. Phase 4 Diagram

Scale: N.T.S.

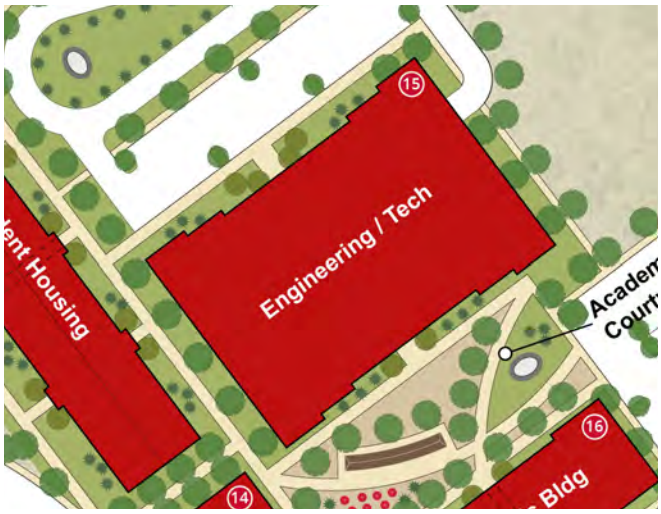
BUILDINGS & FACILITIES

BUILDING 14 - ACADEMIC HEALTH PROFESSIONS BUILDING

This four-story, 75,000 GSF facility is the first academic building focused on a particular program. This building provides academic spaces for health professions and includes simulation spaces, skills labs, flexible lecture spaces and general instruction areas. The building sits adjacent to the Academic Courtyard where users can enjoy shaded outdoor seating.

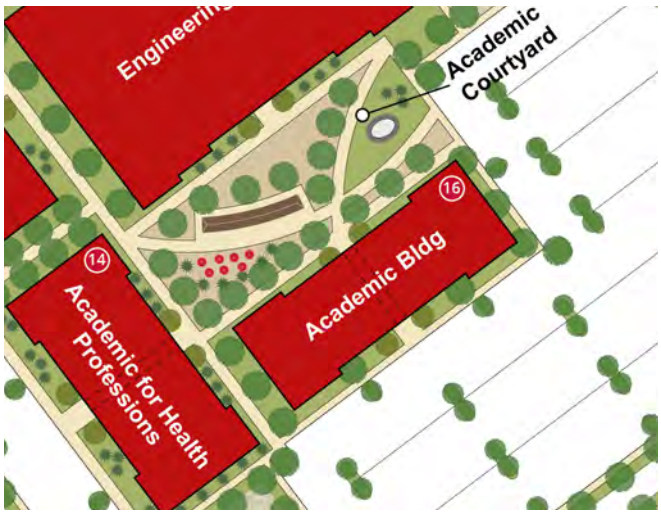
BUILDING 15 - ENGINEERING/TECHNOLOGY BUILDING

The Engineering/Technology Building has the largest footprint on campus. This two-story, 100,000 GSF building focused on engineering and technology programs includes flexible open bay areas, skills spaces, instructional shops and instructional spaces. It will have a loading dock on the east end of the building.



BUILDING 16 - ACADEMIC BUILDING

This Academic Building is a three-story, 50,000 GSF building. It includes facilities for general instruction, student support areas and faculty spaces.



BUILDING 17 - STUDENT HOUSING

This is another four-story, 120,000 GSF Student Housing facility for 400 students. Students will live in individual suites with four bedrooms, shared restrooms and a common lounge area. This housing complex is bordered by two enhanced pedestrian areas, the Entertainment Quad and Dining Courtyard.

BUILDING 18 - STUDENT HOUSING

The final four-story, 120,000 GSF Student Housing facility adds 400 more beds to the campus, bringing the total residential capacity to 2,000 students.

BUILDING 19 – PARKING GARAGE + COMMONS/DINING FACILITY

This mixed-use building is a four-story, 200,000 GSF facility. It includes a 20,000 GSF Commons/ Dining Facility on the north end of the first floor. This dining facility will serve students who live in the area as well as other non-residential campus users. The dining facility includes a loading dock on the west end.

The remainder of the first floor and all of the upper levels of the building are a parking garage. With parking also on the roof, this facility will help provide sufficient parking for campus faculty, staff and students.

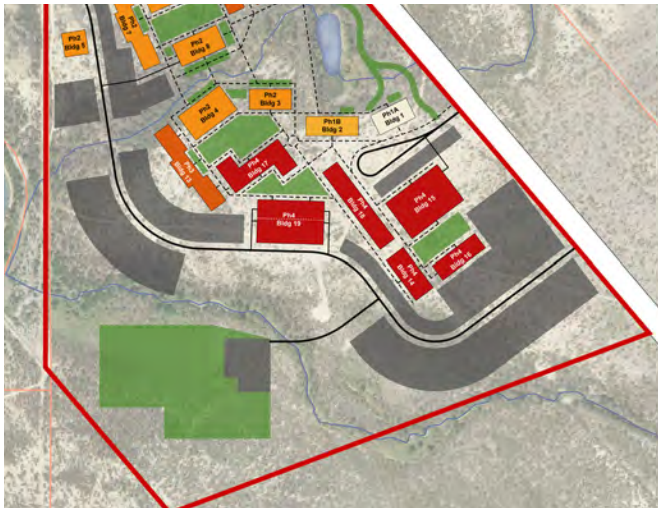
TRANSPORTATION & LANDSCAPE

RECREATION/SPORTS ACCESS

The Intramural and Recreation Sports Area will be developed in Phase 4. A new road and sidewalk that cross the southern creek will provide access to the area.

PARKING (SEE DIAGRAM AT RIGHT)

The final parking expansion on campus includes the addition of approximately 975 spaces in Phase 4. In total, it is estimated that approximately 3,570 parking spaces will be needed on campus at full buildout.

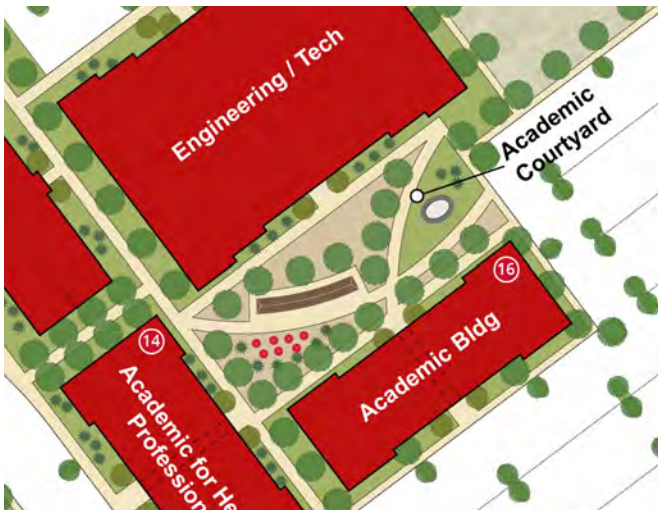


DINING COURTYARD

The Dining Courtyard is situated between the Commons/Dining Facility and two Student Housing buildings. The courtyard has two large decomposed granite areas with seating and shade sails. Enhanced plantings surround the seating areas.

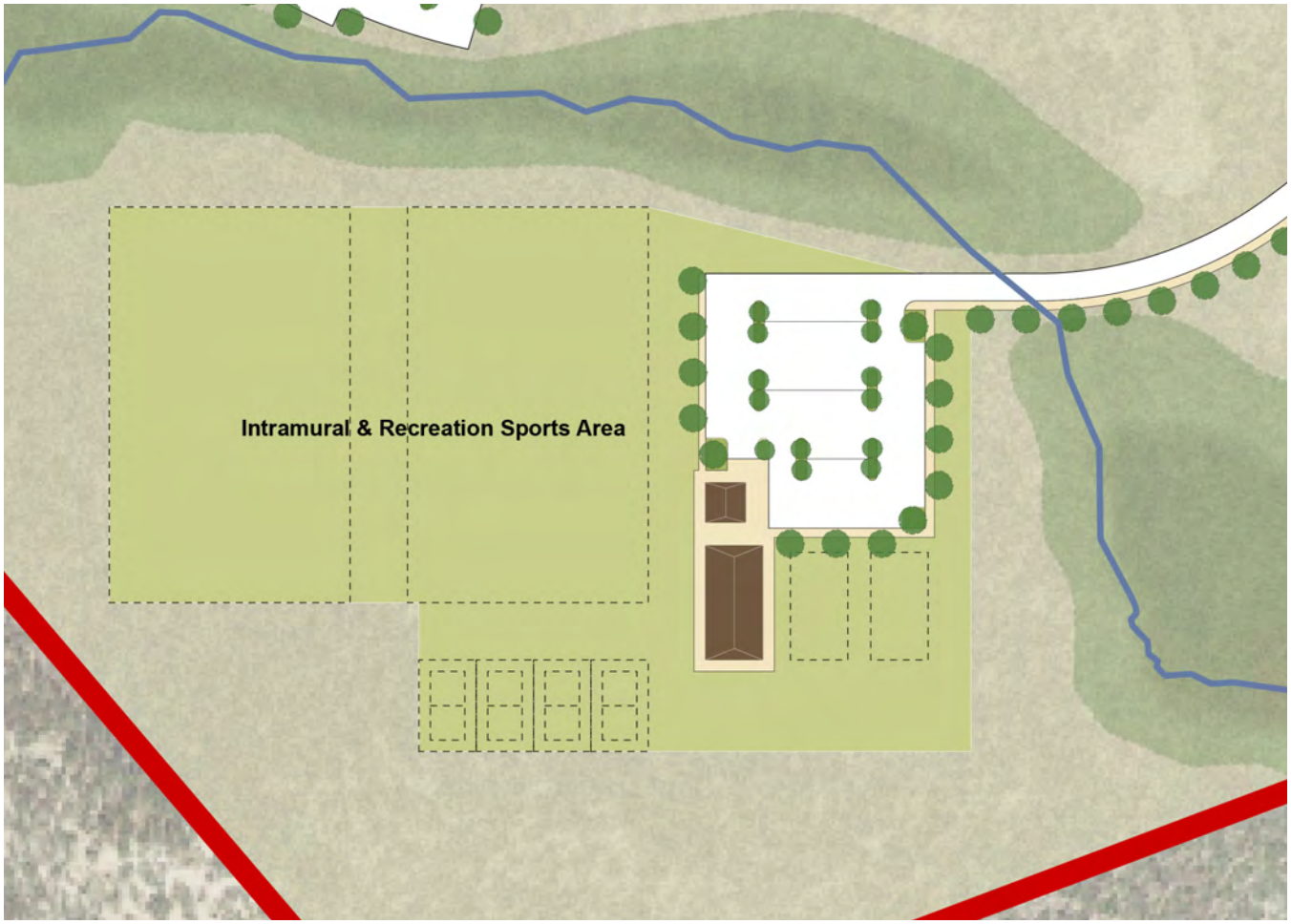
ACADEMIC COURTYARD

The Academic Courtyard is the southernmost courtyard on campus and the only one surrounded by solely academic uses. It includes a long, linear shade structure, tables with umbrellas, a sculptural installation and enhanced planting areas. This courtyard will be visible from adjacent buildings, the campus frontage and through the breezeway in the Academic Building (Building 16).



INTRAMURAL AND RECREATION SPORTS AREA

The southwest corner of the property is cut off from the rest of campus by a creek and some areas with steep slopes just south of the loop road. While this area is somewhat far from the core of campus for an academic, administrative or housing building, it provides an ideal location for recreation amenities. The Intramural and Recreation Sports Area includes a substantial space with slopes 5% or less for recreation amenities. While the specific recreation uses could vary, this area is generally big enough for two soccer fields, four sand volleyball courts and two basketball courts (as illustrated by dashed lines on the plan). This area also includes a large picnic pavilion, restroom building and parking.



UTILITY CONSIDERATIONS

As SRSU progresses into Master Plan implementation, it will be important to consider both the near-term and long-term implications of site and utility design decisions to ensure that near-term decisions don't inhibit long-term plans. Following are some initial utility considerations SRSU should keep in mind.

MECHANICAL & PLUMBING

HVAC

In developing a master plan for HVAC implementation, critical considerations must be given to the phased development of the system. Initially, the focus for the campus will be on installing standalone air-cooled chillers to efficiently serve the first set of buildings with chilled water. This approach ensures a targeted and scalable cooling solution for the initial structures. However, as the site expands and additional buildings are erected, a strategic shift toward a centralized chilled water plant becomes necessary. This transition involves careful planning of the plant's location and the establishment of an interconnected piping network spanning the entire campus. This comprehensive approach facilitates the integration of existing buildings into the centralized HVAC system.

NATURAL GAS

A 5 psi natural gas line should be extended to the site for versatile energy needs. A 5 psi medium pressure line will keep the size of piping smaller, saving on overall cost and ensuring there is enough supply and pressure for future expansion. A utility-owned meter and regulator in the utility easement will control gas delivery supply and pressure.

DOMESTIC WATER

A new 12-inch water line will be extended to the campus site, ensuring a reliable water supply. A utility-owned meter within the utility easement will measure water usage efficiently. The water main needs to be sized to provide adequate flow for the domestic water and fire suppression needs. A flow and pressure test will be needed to determine if there is reliable flow and pressure.

SANITARY SEWER

Coordination with the City's existing lift station for sanitary sewer management is an essential aspect of the campus infrastructure plan. This approach indicates a shared responsibility and collaboration between the campus and the City for effective and environmentally responsible sewage disposal. Elevation changes on the site may prove difficult for gravity sanitary sewer systems. Sewage grinder pumps or lift stations may be required at various locations dependent on the elevation.

ELECTRICAL

It is recommended that the electrical service distribution be provided, owned and maintained by AEP throughout the campus rather than SRSU owning and maintaining distribution within the property. It will be simpler for SRSU's maintenance department to coordinate with AEP on maintaining the lines rather than taking full responsibility of the power distribution. Transmission level voltage training and qualifications is left to AEP representatives where it is standard operating conditions.

STORMWATER

GENERAL DRAINAGE

Runoff from the site is conveyed by overland flow to two unnamed tributaries of the Rio Grande. The tributaries converge at the western property line, where they cross over the Maverick County Canal. The flows eventually discharge into the Rio Grande River.

As the site is developed through phases, parking lots that will be replaced with future building foundations can sheet flow to vegetative filter strips located along the downhill perimeter. Storm drain inlets and underground pipes can be installed under permanent parking lots

built with each phase. The site topography allows for multiple smaller storm drain systems with discharges along multiple points of the existing tributaries. This will allow for smaller pipe diameters and help maintain the existing flow patterns of the site. Maintaining the existing natural flows and using multiple smaller discharge points also help facilitate green space locations as site development progresses in phases.

GREEN INFRASTRUCTURE

Green infrastructure includes a variety of stormwater management practices, such as vegetative filter strips, rain gardens and permeable pavements, which essentially aim to filter and/or absorb stormwater where it falls. Green infrastructure has a variety of benefits, largely grouped into three categories: economic, community and environmental.

- **Economic Benefits:** Green infrastructure helps to lower system maintenance, reduce stormwater treatment costs and conserve energy.
- **Community Benefits:** Green infrastructure is beneficial for a campus, as it can create spaces for recreation. Through placemaking, the general aesthetics of the site are also improved, creating natural areas for improved physical and mental health. Low impact improvements help promote a connection to nature as students, staff and visitors traverse the campus.
- **Environmental Benefits:** The design and implementation of green infrastructure improves air and water quality as well as maintains and protects natural habitats. Erosion control and sediment capture are also key environmental benefits.

As SRSU develops detailed design plans, it is recommended to integrate green infrastructure elements, as appropriate, to help capture, filter and potentially use stormwater on site.

CONSERVATION CONSIDERATIONS

As SRSU develops detailed utility plans for the campus, it is recommended that a variety of resource conservation techniques be evaluated. Based on the site's climate, terrain and orientation, there could be viable opportunities to incorporate rainwater harvesting, condensate recovery and photovoltaic systems. Further details about each of the above-mentioned strategies are included in the Appendix.

APPENDIX

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APPENDIX A
ENVIRONMENTAL MEMO

10431 Morado Circle, Suite 300 • Austin, Texas 78759 • 512-617-3100 • fax 512-617-3101 www.freese.com

TO: Sul Ross State University

FROM: Tam Tran and Avery Mottet (Freese and Nichols, Inc.)

SUBJECT: Environmental Assessment Technical Memorandum

DATE: December 5, 2023

PROJECT: SRS23267: Eagle Pass Campus Master Plan

INTRODUCTION

Sul Ross State University (The University) contracted Freese and Nichols, Inc. (FNI) to evaluate environmental constraints associated with developing a campus master plan in Eagle Pass, Maverick County, Texas. The project would assist urban planners in the design and placement of buildings, parking lots, athletic facilities, and roadways on the proposed campus project area.

This technical memorandum evaluates the potential impacts on waters of the U.S. (WOTUS), federally listed species, and cultural resources, and identifies potential U.S. Army Corps of Engineers (USACE) permitting requirements for the Eagle Pass Campus Master Plan project. Specifically, the three primary efforts summarized in this memorandum include:

- **Delineation of WOTUS** – a desktop analysis was performed to identify potential WOTUS (i.e., regulated wetlands, streams, or impoundments) within the project area and evaluate compliance with Section 404 of the Clean Water Act (CWA).
- **Habitat Assessment for Federally Listed Species** – a habitat assessment was performed to evaluate compliance with the Endangered Species Act (ESA).
- **Cultural Resources Assessment** – a desktop review of historical resources and previously conducted archeological surveys was completed.

METHODS

Delineation of WOTUS

FNI ecologists performed a desktop analysis to assess the project site for WOTUS, including wetlands. Examples of literature and databases reviewed included but were not limited to, recent and historic aerial imagery, U.S. Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) maps, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMS), U.S. Geological Survey (USGS) 7.5-minute topographic maps, and USGS National Hydrography Dataset.

Habitat Assessment for Federally Listed Species

FNI ecologists conducted a desktop analysis to assess the project site for potential habitat for federally listed species. FNI reviewed various spatial data and USFWS and TPWD databases for the proposed project area in Maverick County to perform the habitat assessment. Additionally, spatial data pertaining to previously identified occurrences of federally listed species were reviewed (i.e., USFWS IPaC, TPWD TXNDD, eBird).

Cultural Resources Assessment

An FNI archeologist conducted a desktop analysis to assess the project site for potential cultural resources. FNI reviewed a variety of spatial data and archeological resources such as the U.S. Department of Agriculture Web Soil Survey, Texas Archeological Site Atlas Review, Texas Department of Transportation (TxDOT) Potential Archeological Liability Maps (PALM), and historical aerial photographs to perform the cultural resource review.

RESULTS

Delineation of WOTUS

The USACE regulates the placement of fill or discharged material into jurisdictional WOTUS under Section 404 of the CWA. Jurisdictional WOTUS include areas below the ordinary high-water mark (OHWM) of relatively permanent streams and rivers connected to Traditionally Navigable Waters (TNW), within adjoining wetlands, or within tidal waters. Fill material placed within jurisdictional WOTUS requires authorization under a Section 404 permit. Nationwide Permits (NWPs) are available to authorize types or categories of specific work or actions within jurisdictional WOTUS, but the amount of work is limited by a disturbance threshold.

There are two WOTUS features identified within the project area. The unnamed tributaries flow into Seco Creek and then into the Rio Grande River. Within the context of the proposed project, jurisdictional WOTUS would include any area below the OHWM as delineated along the unnamed tributaries that eventually discharge into the Rio Grande River (**Figure 1**). The desktop review also indicated a freshwater pond on the eastern end of the project area.

In addition to the unnamed tributaries and pond, there is an earthen water canal system near the proposed project site. The canal structure is outside the project area; however, water quality protections, construction buffers, and coordination with stakeholders may be required to prevent impacts on the water canal system.

Habitat Assessment for Federally Listed Species

Table 1, generated from the USFWS Information for Planning and Consultation (IPaC) website (2023a), provides a list of federally listed species that have been identified as potentially occurring near the project area in Maverick County, Texas. Two bird species and one freshwater mussel species are federally listed in Maverick County. The table also lists one candidate and three proposed endangered species potentially occurring in Maverick County. Only species listed as threatened or endangered by the USFWS have complete federal protection under the Endangered Species Act. Information such as life history, habitat requirements, and potential project effects is provided in the following paragraphs.

Table 1. Federally listed species that potentially occur near the project area in Maverick County[1]

Common Name	Scientific Name	Federal Status[2]	Project Effect Determination
MAMMAL			
Tricolored Bat	*Perimyotis subflavus*	PE	No Effect
BIRDS			
Piping Plover	*Charadrius melodus*	T	No Effect
Red Knot	*Calidris canutus rufa*	T	No Effect
FRESHWATER MUSSELS			
Mexican Fawnsfoot	*Truncilla cognata*	PE	No Effect
Salina Mucket	*Potamilus metnecktayi*	PE	No Effect
Texas Hornshell	*Popenaias popeii*	PE	No Effect
INSECTS			
Monarch Butterfly	*Danaus plexippus*	C	No Effect

[1] According to USFWS IPaC, 2023a, 2023b.

[2] T = Threatened, PE = Proposed Endangered, and C = Candidate

Tricolored Bat

Tricolored Bats are one of the smallest bat species native to North America. The species is wide-ranging across the eastern and central United States and portions of southern Canada, Mexico and Central America. During the winter, tricolored bats are found in caves and mines, although in the southern United States, where caves are sparse, tricolored bats are often found roosting in roadway-associated culverts. During the spring, summer and fall, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves (USFWS, 2021). On September 14, 2022, the USFWS announced a proposal to list the tricolored bat as endangered under the ESA. The species is not currently protected under the ESA; however, if the species becomes federally protected before construction, a re-evaluation of the project's potential impact on this species may be needed. Despite this, the project would not impact roost trees as part of construction and no effect on the species is anticipated.

Piping Plover and Red Knot

Piping Plovers and Red Knots are primarily coastal migrants. Preferred habitats for the species include brackish bays, tidal mud flats, marshes, and dunes that are not found within the project area (USFWS, 2011). There are no large, wet areas near the project area that could provide habitat for the shorebirds; it is very unlikely that the species would be affected by the project's actions. There have been no eBird (2023) observations for the listed species within 5 miles of the project area. TPWD TXNDD (2023) shows no official observations near the project area. No suitable habitat is found within the project area, and no impacts to the bird species are anticipated from the project.

Mexican Fawnsfoot, Salina Mucket, and Texas Hornshell

The Mexican Fawnsfoot and Salina Mucket are freshwater mussels native to the Rio Grande in Texas and, historically Mexico. The Texas Hornshell is a freshwater mussel native to the Pecos River and Rio Grande watershed. The Mexican Fawnsfoot is small-sized with a yellow to green outermost shell, faint chevron-like markings, an elongated outline, and a laterally inflated shell. The Salina Mucket is medium sized with a brown, tan, or black outermost shell surface, an ovate outline, and a somewhat inflated shell. The Texas Hornshell is elongated rectangular shaped with

olive-green, tan to dark brown or black color (Howells, 2014). Mexican Fawnsfoot and Salina Muckets occur in medium to large rivers, where small-grained material, such as clay, silt or sand, gathers in crevices providing a suitable anchoring substrate (USFWS, 2023c). The only known remaining Mexican Fawnsfoot population occurs from approximately Eagle Pass, Texas, downstream to San Ygnacio, Starr County, Texas. The only known remaining population of Salina Mucket is located in the Lower Canyons of the Rio Grande just downstream of Big Bend National Park. Texas Hornshells are typically found near banks, boulders or crevasses in water depths less than 1.5 meters. Hornshells are not commonly observed in deep silt, shifting sands or reservoirs (Howells, 2014). The project would not impact the Rio Grande or perennial streams as part of construction, and no effect on the three mussel species is anticipated.

Monarch Butterfly

Adult Monarch Butterflies are large with bright orange wings with black borders and white spots. During the breeding season, Monarch Butterflies lay their eggs on milkweed plants. Larval caterpillars feed on the milkweed plants for a few weeks before pupating into a chrysalis and emerging 6-14 days later as an adult butterfly. Due to their short lifespan, there are multiple generations of Monarch Butterflies within a breeding season and along their 3,000-mile migratory route. Monarch migration begins in early spring, from February to March. Monarch Butterflies are found throughout Texas during migration season, and the project area is likely within the migratory corridor (USFWS, 2020). The Monarch Butterfly is a candidate species not currently protected under the ESA. The project is not likely to jeopardize the continued existence of the species.

Cultural Resource Assessment

Projects sponsored by public entities that affect a cumulative area greater than 5 acres or that disturb more than 5,000 cubic yards or 5 acres require advance consultation with the Texas Historical Commission (THC) according to Section 191.0525 (d) of the Antiquities Code of Texas (TAC). Since the proposed project would disturb approximately 12 acres of land, advance consultation with the THC is required.

One archeological site (41MV375) is indicated within the one-kilometer search radii of the project area. Additionally, two archaeological sites (41MV112 and 41MV113) are located just outside the one-kilometer search radii (**Figure 2**).

Archeological site 41MV375, located east of the proposed Area of Potential Effect (APE) adjacent to US Highway 57, was conducted in 2013. A pedestrian survey revealed prehistoric lithic scatter at the site. No recommended actions or further work was proposed for this site.

Archeological site 41MV112, located east of the proposed APE adjacent to US Highway 57 and north of archeological site 41MV375, was conducted in 1995. The unknown prehistoric lithic quarry site revealed surface artifacts, including primary and secondary flakes and several large cores. No recommended actions or further work was proposed for this site.

Archeological site 41MV113, located east of the proposed APE adjacent to US Highway 57 and north of archeological site 41MV112, was conducted in 1995. The unknown prehistoric lithic quarry site revealed primary and secondary flakes scattered on a linear pattern. No recommended actions or further work was proposed for this site.

TxDOT PALMS were reviewed to determine the relative likelihood of NRHP-eligible prehistoric archeological sites being preserved near the surface or at deeper levels. The proposed APE is considered to have moderate to high integrity at depths greater than 1 meter (**Figure 3**).

DISCUSSION

Delineation of WOTUS

There are jurisdictional WOTUS features identified within the SRSU Eagle Pass project area. Best management practices would be utilized to prevent impacts to the downstream watershed of the Rosita Creek-Rio Grande. Fill material placed within jurisdictional WOTUS require authorization under a Section 404 permit. NWPs are available to authorize specific work or actions within jurisdictional WOTUS. The threshold of allowed disturbance will vary based on the proposed action and design.

Habitat Assessment for Federally Listed Species

There are three federally listed species, three proposed endangered, and one candidate species for listing that potentially occur within the project area in Maverick County (USFWS, 2023a). A desktop evaluation and habitat assessment determined that the project would have no effect on federally listed species. Additionally, no federally designated Critical Habitat is located within the project area.

Cultural Resource Assessment

The proposed APE is situated in an area not previously disturbed and surrounded by undeveloped open land. The TASA records revealed three archeological sites within one kilometer of the proposed APE. No recommended actions were proposed for any of the three archaeological sites. However, the proposed APE has yet to be surveyed. Additionally, the PALM indicated that a majority of the proposed APE is situated in an area where the relative likelihood of finding NRHP-eligible prehistoric archeological sites within the near surface (3 feet or less) or in deeper soil deposition, ranges from moderate to high. Advanced coordination with the THC is recommended, and the likelihood of archeological investigation is high.

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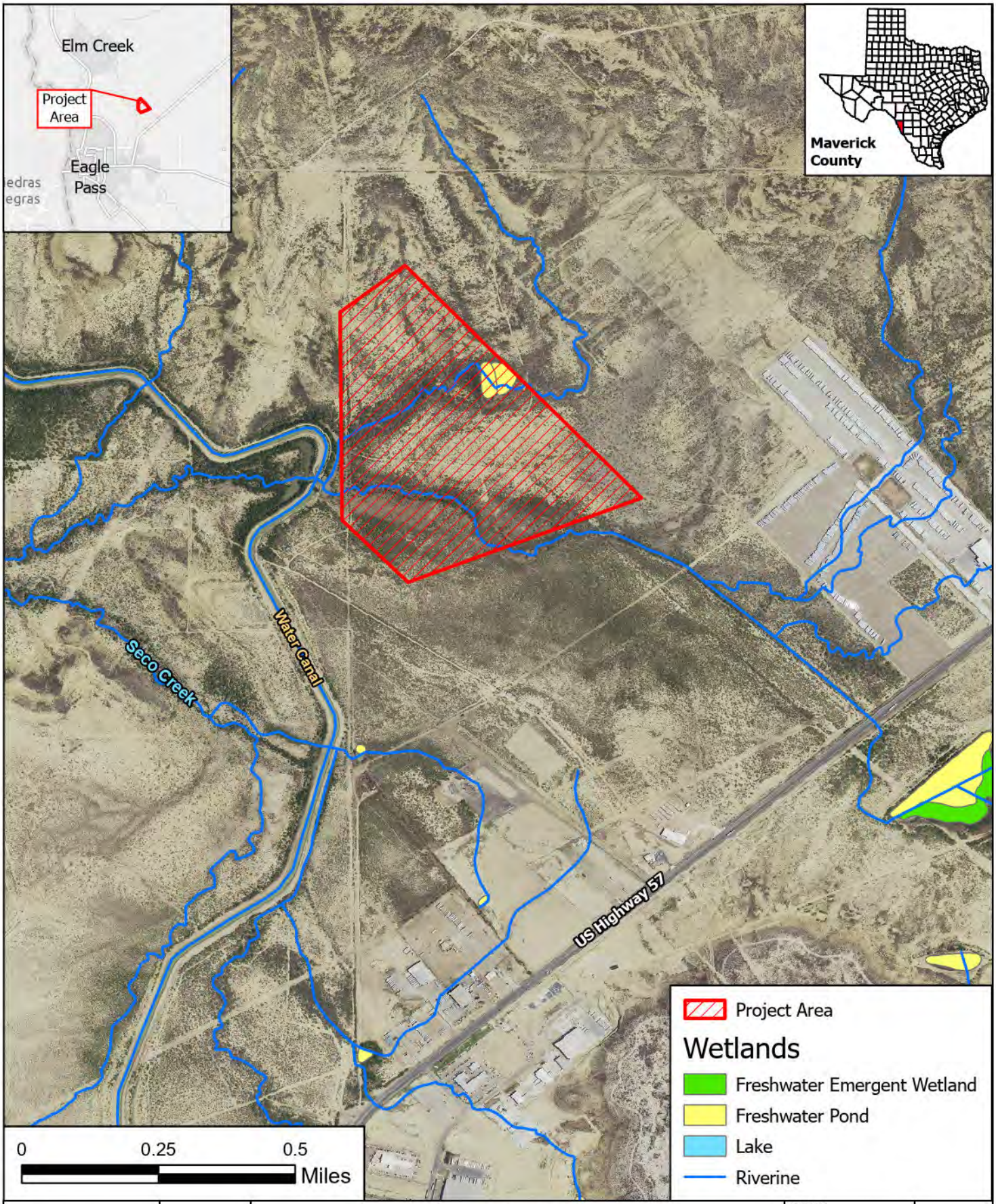

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N W E S

City of Eagle Pass

Sul Ross College Project

Wetlands Map

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FIGURE

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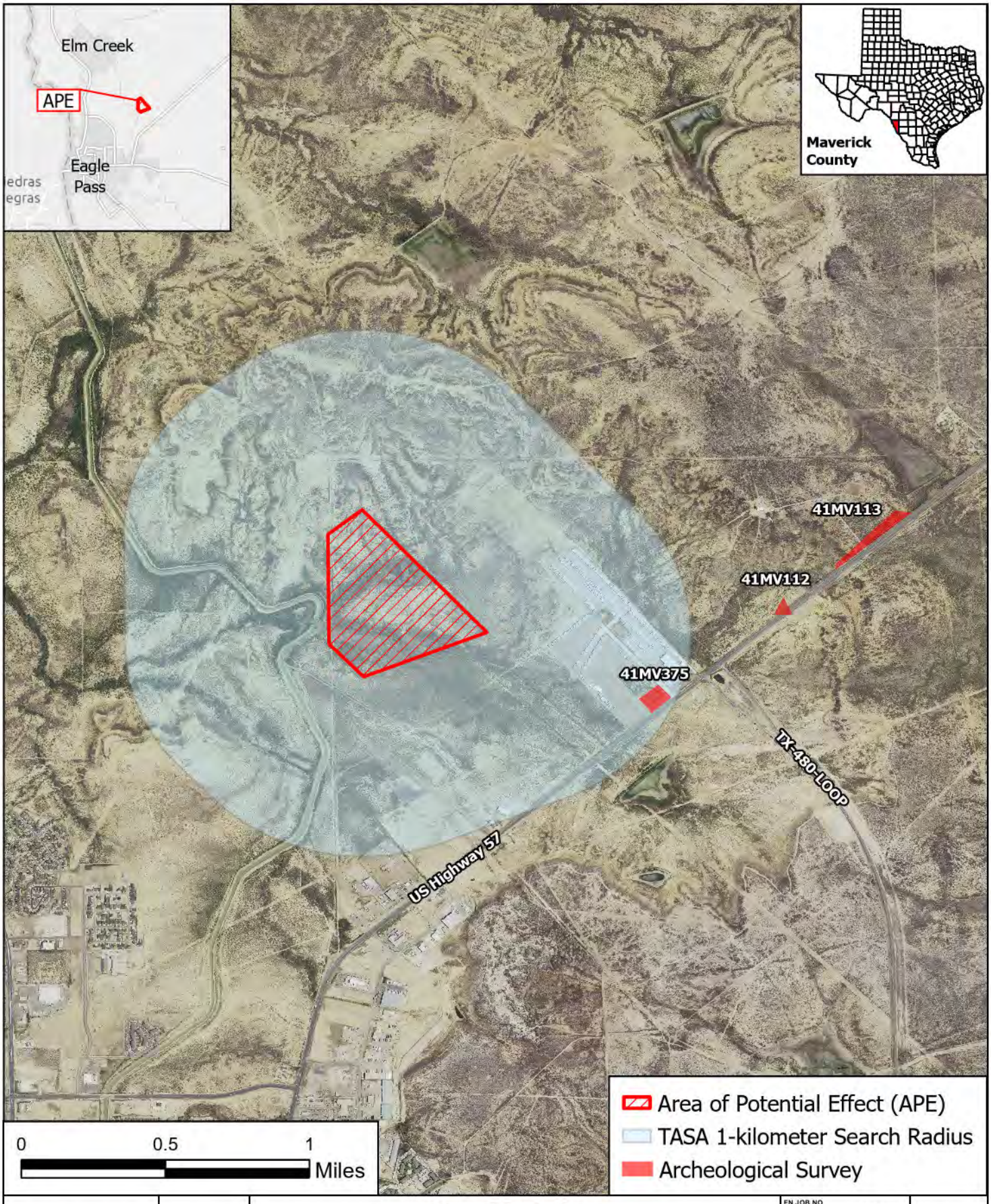

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Sul Ross College Project

Cultural Resources Map

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FIGURE

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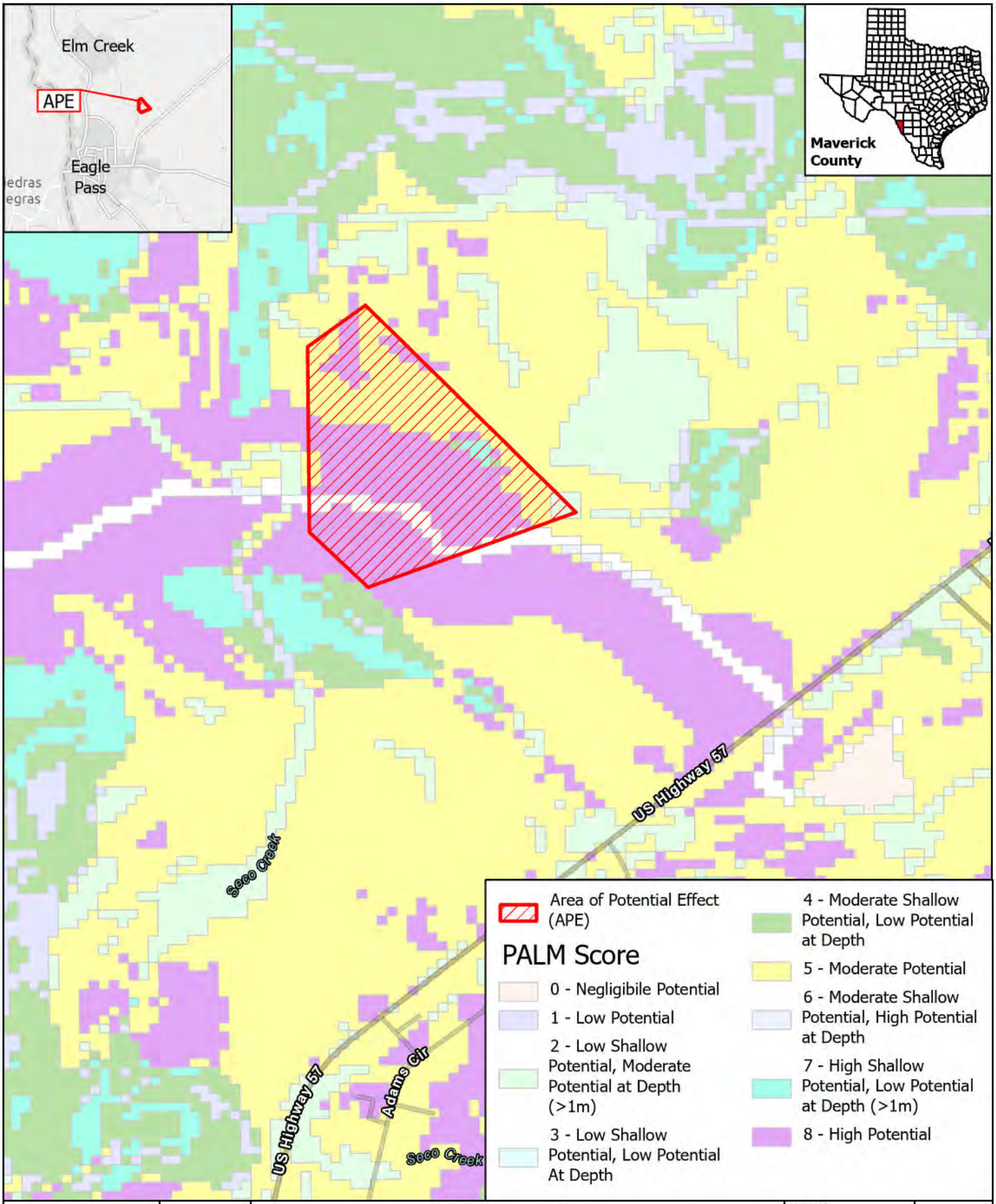

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Sul Ross College Project

Potential Archeological Liability Map (PALM)

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FIGURE

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APPENDIX B
UTILITY MASTER PLAN

EXISTING UTILITIES

MECHANICAL & PLUMBING

HVAC

Currently, there are no existing heating, ventilation and air conditioning (HVAC) utilities or infrastructure in place at the site. All HVAC related infrastructure will be developed in phases as required for the buildout of the campus.

NATURAL GAS

A natural gas main on the west side of the project site serves as a crucial energy source for the area. This infrastructure ensures a reliable and convenient supply of natural gas, and will help to support various needs of the campus.

DOMESTIC WATER

A 12-inch water main, situated approximately 3,300 feet to the southeast of the site within the highway easement, plays a vital role in the water supply infrastructure. This main will serve as a key conduit for providing clean and potable water to the campus.

SANITARY SEWER

While there is no existing sanitary sewer on the project site, an established lift station is located approximately 3,000 feet southwest of the campus which will provide a solution for wastewater management. Other buildings in the vicinity rely on septic systems for their sanitary sewer needs but this is not recommended due to the size of the campus development.

These mechanical and plumbing utility features in the area will collectively contribute to the overall functionality and sustainability of the project site, and will help to provide essential services for near- and long-term development.

ELECTRICAL

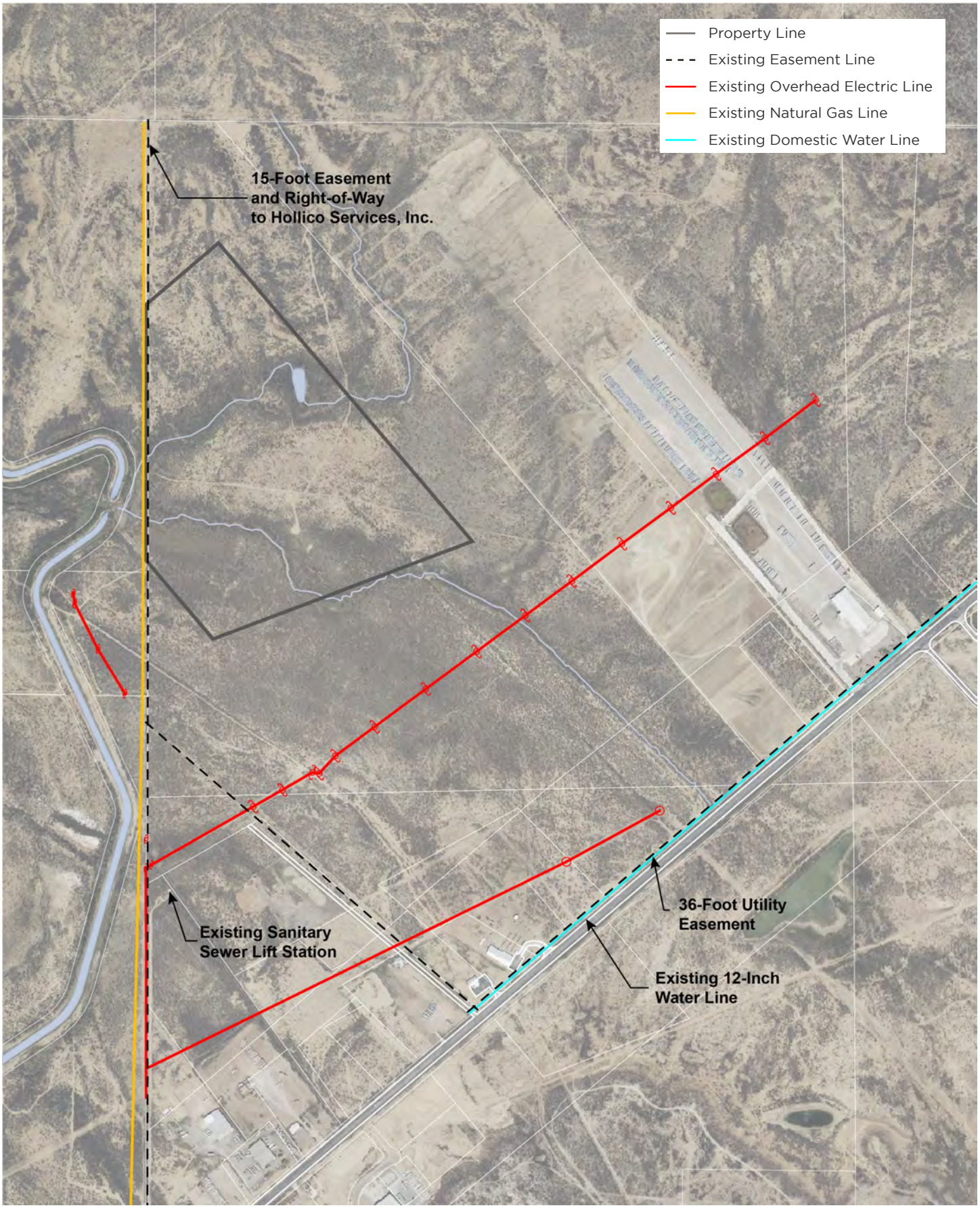
There are no existing electrical utilities within the property. The nearest overhead electrical lines are located south and west of the property.

While the boundary survey completed for this site showed a Central Power and Light Company easement running through the property, the planning team has confirmed with American Electric Power company (AEP) that the easement line can be removed from the survey map (thus it is not illustrated on Map 16). A right-of-way agent from AEP confirmed that their maps do not show distribution or transmission line easements along this route.

STORMWATER

The SRSU campus is approximately 100 acres, located north of Eagle Pass, 1 mile northwest of the Highway 87/Loop 480 intersection. The site is undeveloped land that slopes inward to two unnamed tributaries of the Rio Grande. The tributaries converge at the western property line, where they cross over the Maverick County Canal, which runs adjacent to the western property line. There are no floodplains or floodway on or near the project site. A small freshwater pond with variable water level is present along the northern tributary, near the northeast property line. Runoff from the site is conveyed by overland flow to the two tributaries which eventually discharge into the Rio Grande River. The majority of slopes across the site range between 1% to 5% and stormwater flows from the east to the west.

There are no existing stormwater utilities on the property.



Map 16. Existing Utilities Map

Scale: N.T.S. N

UTILITY CONSIDERATIONS

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- **Community Benefits:** Green infrastructure is beneficial for a campus, as it can create spaces for recreation. Through placemaking, the general aesthetics of the site are also improved, creating natural areas for improved physical and mental health. Low impact improvements help promote a connection to nature as students, staff and visitors traverse the campus.
- **Environmental Benefits:** The design and implementation of green infrastructure improves air and water quality as well as maintains and protects natural habitats. Erosion control and sediment capture are also key environmental benefits.

As SRSU develops detailed design plans, it is recommended to integrate green infrastructure elements, as appropriate, to help capture, filter and potentially use stormwater on site.

CONSERVATION CONSIDERATIONS

As SRSU develops detailed utility plans for the campus, it is recommended that a variety of resource conservation techniques be evaluated. Based on the site's climate, terrain and orientation, there could be viable opportunities to incorporate rainwater harvesting, condensate recovery and photovoltaic systems.

RAINWATER HARVESTING AND CONDENSATE RECOVERY

The average yearly rainfall rate in Eagle Pass, Texas, is approximately 21 inches. The SRSU Eagle Pass campus will have approximately 400,000 square feet of roof area that could be used to collect approximately 87,500 gallons of rainwater per year. Incorporating a rainwater collection system could help to reduce potable water use on campus.

The collected rainwater would be routed to a central storage cistern, where it would be stored until needed for various campus applications. Non-potable water fixtures such as water closets and urinals, as well as the irrigation system, are among the primary potential recipients of this stored rainwater. There's also potential for the harvested rainwater to supplement water needs for HVAC systems.

Condensate drains from the HVAC systems could also be directed toward the rainwater collection lines to enhance overall water harvesting. This process, known as condensate recovery, involves capturing the water formed during the air conditioning process when warm air encounters the cold evaporator coil. Redirecting HVAC condensate to rainwater collection lines allows for a more efficient utilization of water resources.

In response to potential drought conditions, the cistern would be equipped with a potable water backup line, ensuring a reliable water source during periods of insufficient rainfall. Additionally, a manual potable water bypass connection would offer a flexible solution in times of drought.

Facilitating the distribution of rainwater would be a pump system designed to draw water from the cistern. Before reaching its designated endpoints, the rainwater should undergo filtration and UV treatment to eliminate large particles, bacteria and algae. This step is crucial in preserving the integrity of the piping system and preventing unwanted odors.

Rainwater harvesting represents a pragmatic approach to sustainable water management. By harnessing local rainfall and implementing backup solutions, the University could enhance water efficiency for various campus needs, contributing to both environmental responsibility and operational resilience.

RENEWABLE AND ELECTRICAL ENERGY REDUCTION OPPORTUNITIES

The electrical demand load that will be estimated in Figure 11 on page 92 assumes that the electrical utility service must be able to serve the full demand and design utilizing energy efficient MEP system design. However, additional renewable on-site generation and energy reduction efforts are encouraged when funding and resources can be dedicated to it.

For this specific campus location, Photovoltaic (PV) systems are the most opportune renewable on-site generation source. Generally, PV systems appropriate for this scale of demand loads cost about $80,000 for an approximately 250kW ground-mounted array of panels covering an acre (43,560 square feet) of space. The mounting location could be open space, flat roof space or covered parking structures (an elevated mounting structure for parking would be an additional cost) adjacent to the building load that it is intended to serve. The electrical generation capacity of the PV array should not exceed the associated building load that it's associated with to maximize effectiveness of available funding. Oversizing the PV array will depend on reverse metering agreements with AEP and will extend the return on investment (ROI) duration.

The sizing for PV generation on campus will be constrained by the space available to dedicate to PV panels and associated equipment, the size of the load to be served (kW), and funding available for PV array construction.

It should be noted that PV panels and inverters have life expectancies of 20-to-30 years. Depending on negotiated utility rates, the ROI is anticipated to be in the range of 8-to-10 years. At the conclusion of the system life, replacement of the panels and inverters should be anticipated.

MECHANICAL & PLUMBING

PHASES 1A, 1B AND 2 BUILDINGS

In Phases 1A, 1B and a portion of Phase 2, the implementation of the HVAC system will rely on a chilled water system served by standalone air-cooled chillers. The selection of air-cooled chillers for the initial buildings provides a flexible and efficient cooling solution. The technical considerations for this phase are described below.

CHILLED WATER SYSTEM DESIGN

- Installation of air-cooled chillers with the capacity to meet the immediate cooling requirements of Phase 1A/1B/2 buildings.
- Incorporation of a closed-loop chilled water system to circulate chilled water between the chillers and the building air handling units (AHUs).
- Proper sizing and selection of chilled water pumps and AHUs to ensure optimal system performance.

PIPING DESIGN FOR FUTURE INTEGRATION

- Adoption of a modular and scalable approach in designing the chilled water piping system within Phase 1A/1B/2 buildings.
- Inclusion of strategically located connection points or headers in the piping layout, facilitating seamless integration with the Central Chilled Water Plant in subsequent phases.
- Utilization of standardized fittings and valve configurations to simplify future modifications and connections.

DEVELOPMENT OF THE CENTRAL PLANT AND PIPING NETWORK

The phased implementation of the Central Plant depends on the schedule of buildout and on both demand and capacity assessments. Initially, standalone air-cooled chillers will be deployed to meet the immediate cooling needs of the first buildings. The decision to integrate the Central Chilled Water Plant comes at a juncture where the campus demand justifies the transition from decentralized to centralized cooling. This determination relies on factors such as building occupancy, load calculations and energy efficiency goals.

The addition of campus piping follows a logical sequence, synchronized with the construction of the Central Plant. The piping network is strategically laid out to connect earlier phase structures following a proposed utility corridor. This phased approach minimizes disruptions to ongoing operations while optimizing the overall performance of the HVAC system.

Capacity considerations involve a detailed analysis of current and future cooling requirements. This assessment dictates the size and specifications of the Central Plant equipment to ensure it aligns with the anticipated load. As the campus grows and evolves, periodic evaluations and potential adjustments to the Central Plant's capacity may be necessary to accommodate changing demands. The technical considerations for phasing the Central Plant are driven by demand, efficiency and adaptability to future growth. The approximate cooling capacity required for the buildout of the campus is shown in Figure 10.

Figure 10. Approximate Cooling Capacity (in Tons) Required for the Buildout

PHASE	BLDG. #	NAME	GROSS SQUARE FEET (GSF)	APPROX. CHILLED WATER CAPACITY (TONS)	CUMULATIVE TONNAGE
1A	1	Multipurpose Academic Building	41,000	140	140
1B	2	Academic/Faculty Office Building	70,000	240	380
2	3	Onboarding/Student Services Building	45,000	150	530
	4	Academic/Library Building	80,000	270	800
	5	Central Plant	10,000	40	840
	6	Student Wellness Center	40,000	140	980
	7	Student Housing	120,000	400	1,380
	8	Commons/Dining Facility	20,000	70	1,450
3	9	Administration Building	40,000	140	1,590
	10	Academic Building	60,000	200	1,790
	11	Onboarding Building/Welcome Center	45,000	150	1,940
	12	Student Housing	120,000	400	2,340
	13	Student Housing	120,000	400	2,740
4	14	Academic Health Professions Building	75,000	250	2,990
	15	Engineering/Technology Building	100,000	340	3,330
	16	Academic Building	50,000	170	3,500
	17	Student Housing	120,000	400	3,900
	18	Student Housing	120,000	400	4,300
	19	Dining (excluding parking areas)	20000	100	4,400
		Conditioned Space Total	**1,296,000**	**4,400 tons**	

PLUMBING UTILITY COORDINATION

NATURAL GAS

A 5 psi natural gas line will extend into the site, following the designated route within a proposed utility corridor. This placement ensures efficient distribution to various buildings. At each building, individual regulators will be installed to reduce the gas pressure, adjusting it to a range of 0.5-1.0 psi based on the specific gas demand of each structure.

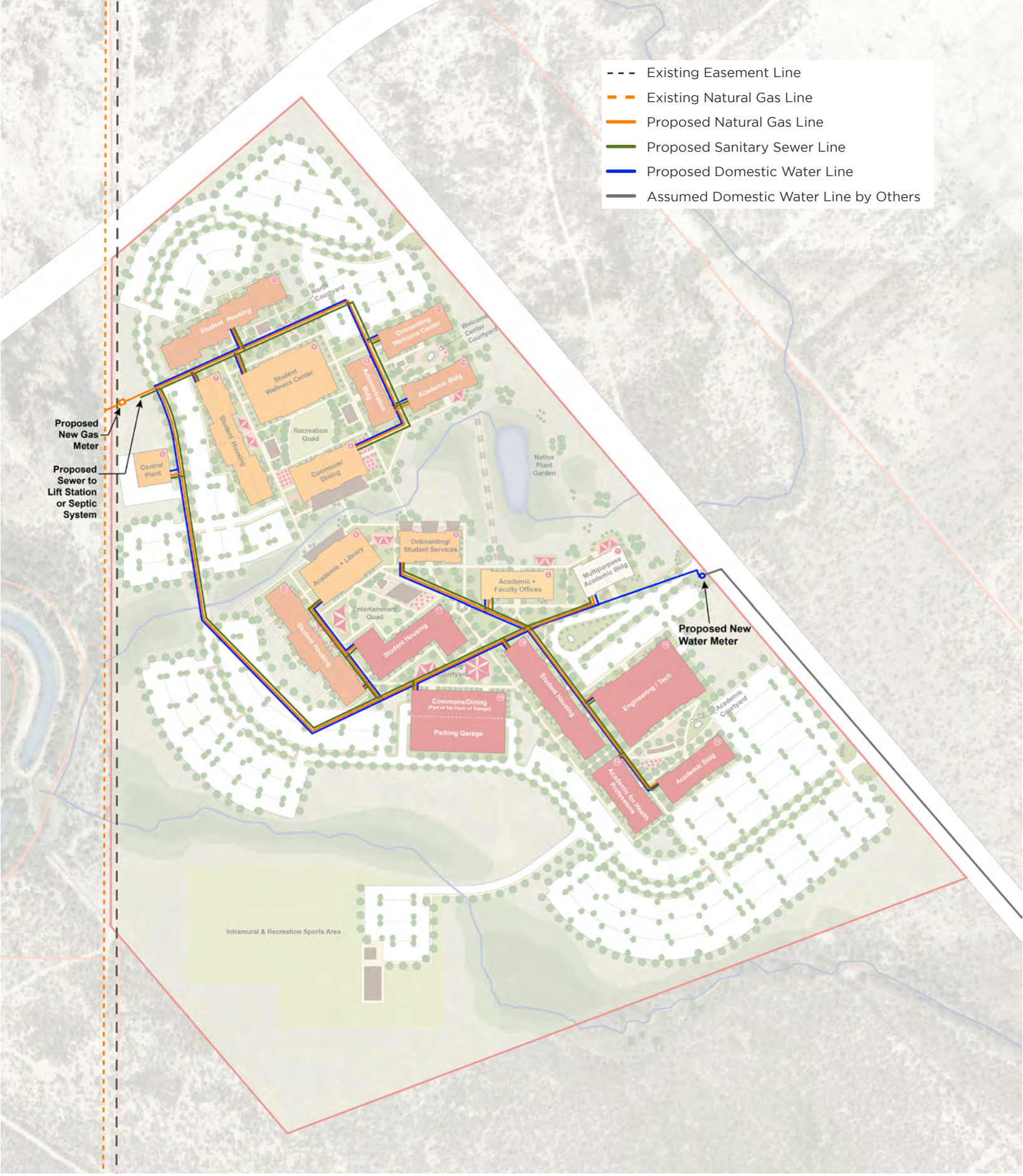
DOMESTIC WATER

The proposed 8- to 12-inch water main, routed through the utility corridor once on the campus property, is a critical component of the water supply infrastructure. To guarantee ample pressure for all buildings, the recommended pressure at the service entrance is a minimum of 60 psi. This ensures that each structure within the site receives a consistent and reliable water supply, meeting the demands of the campus.

SANITARY SEWER

The sewer system is advised to follow the utility corridor route, consolidating into a main pipe that extends southwest towards the existing lift station located approximately 3,000 feet away. This integrated sewer design promotes efficiency in wastewater management and minimizes environmental impact. Depending on elevation changes across the site, additional lift stations may be required to facilitate the smooth flow of sewage to the main collection point.

These detailed plans for natural gas, water and sanitary sewer systems underscore a comprehensive and forward-thinking approach to utility design, ensuring the long-term functionality and resilience of the site's infrastructure.



Map 17. Utility Master Plan - Mechanical & Plumbing

Scale: N.T.S.

ELECTRICAL

POWER DISTRIBUTION BUILD-OUT

PROPOSED LAYOUT

The proposed electrical layout is for AEP to provide power from underground lines located in the public right-of way (ROW) along the planned road extension on the eastern edge of the property. AEP service will enter the campus near Building 1 and then distribute power through medium-voltage underground lines, switchgears and transformers throughout the campus. Each building will have a pad-mounted transformer to step-down the medium voltage to low voltage, 480V or 208V. AEP will own and maintain the distribution system throughout campus with each building served with its own transformer. The distribution lines should be routed such that they form a loop back to the AEP ROW feed with redundancy in mind. A minimum of two AEP entrances into campus will allow flexibility to alter service directions in response to failures or maintenance. Routing through campus will require AEP easement agreements. Aligning the routing with other utilities will allow for combined, joint use easement agreements minimizing the amount of dedicated clear space.

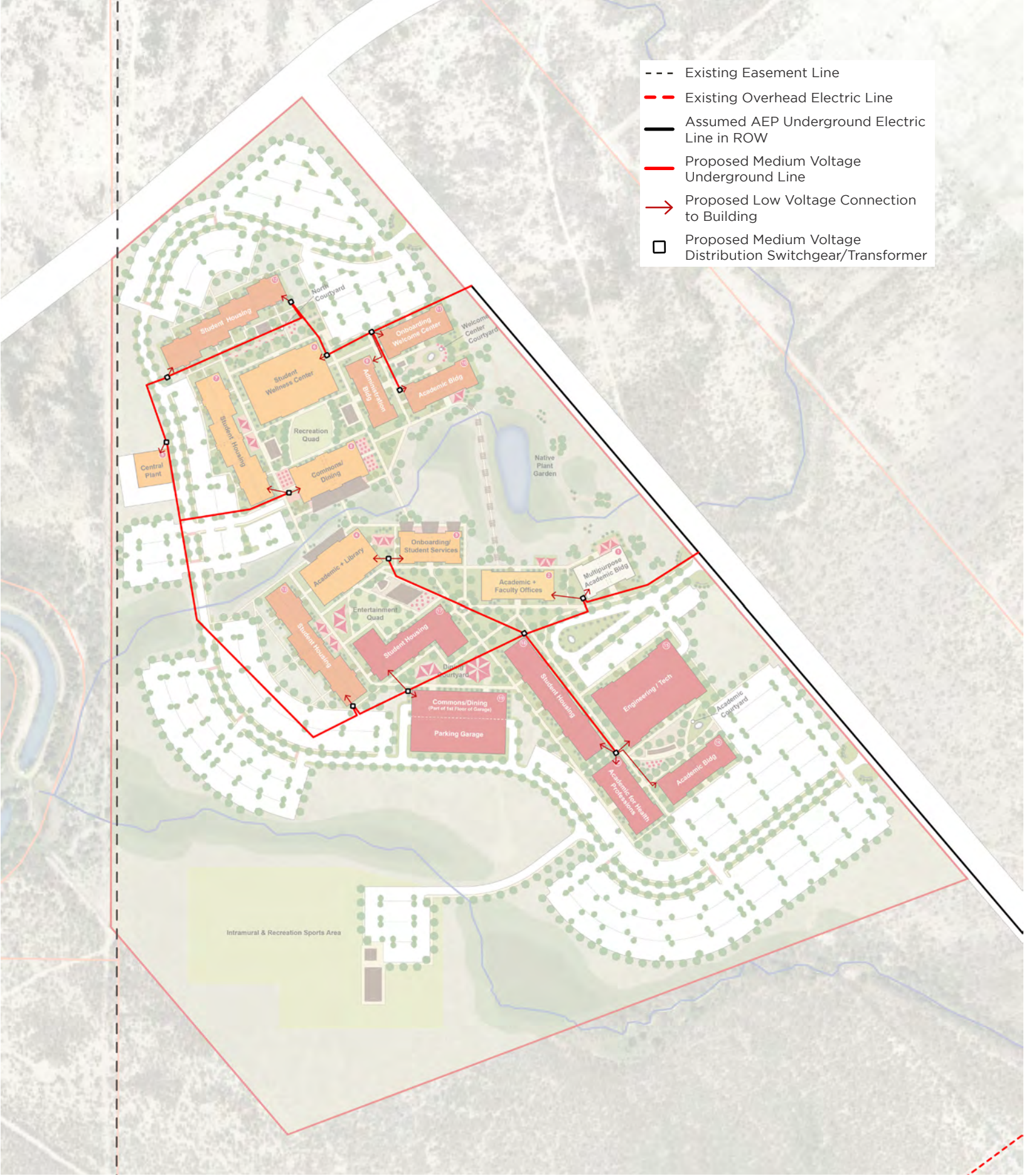
Phasing of the electrical service buildout on campus should follow the campus phasing.

EXPECTED ELECTRICAL SERVICE LOADS

The expected loads for each building were estimated based on square footage and building type according to NEC article 220. Pedestrian and street lighting circuits are expected to be routed from buildings near to them. The estimated loads for each building are listed in Figure 11.

Figure 11. Expected Electrical Service Loads

BLDG. #	NAME	EXPECTED LOAD (KVA)
1	Multipurpose Academic Building	213
2	Academic/Faculty Office Building	454
3	Onboarding/Student Services Building	313
4	Academic/Library Building	484
5	Central Plant	60
6	Student Wellness Center	240
7	Student Housing	540
8	Commons/Dining Facility	126
9	Administration Building	324
10	Academic Building	403
11	Onboarding Building/ Welcome Center	302
12	Student Housing	540
13	Student Housing	540
14	Academic Health Professions Building	528
15	Engineering/Technology Building	638
16	Academic Building	331
17	Student Housing	540
18	Student Housing	540
19	Parking Garage/Dining	192
	Total	7,308

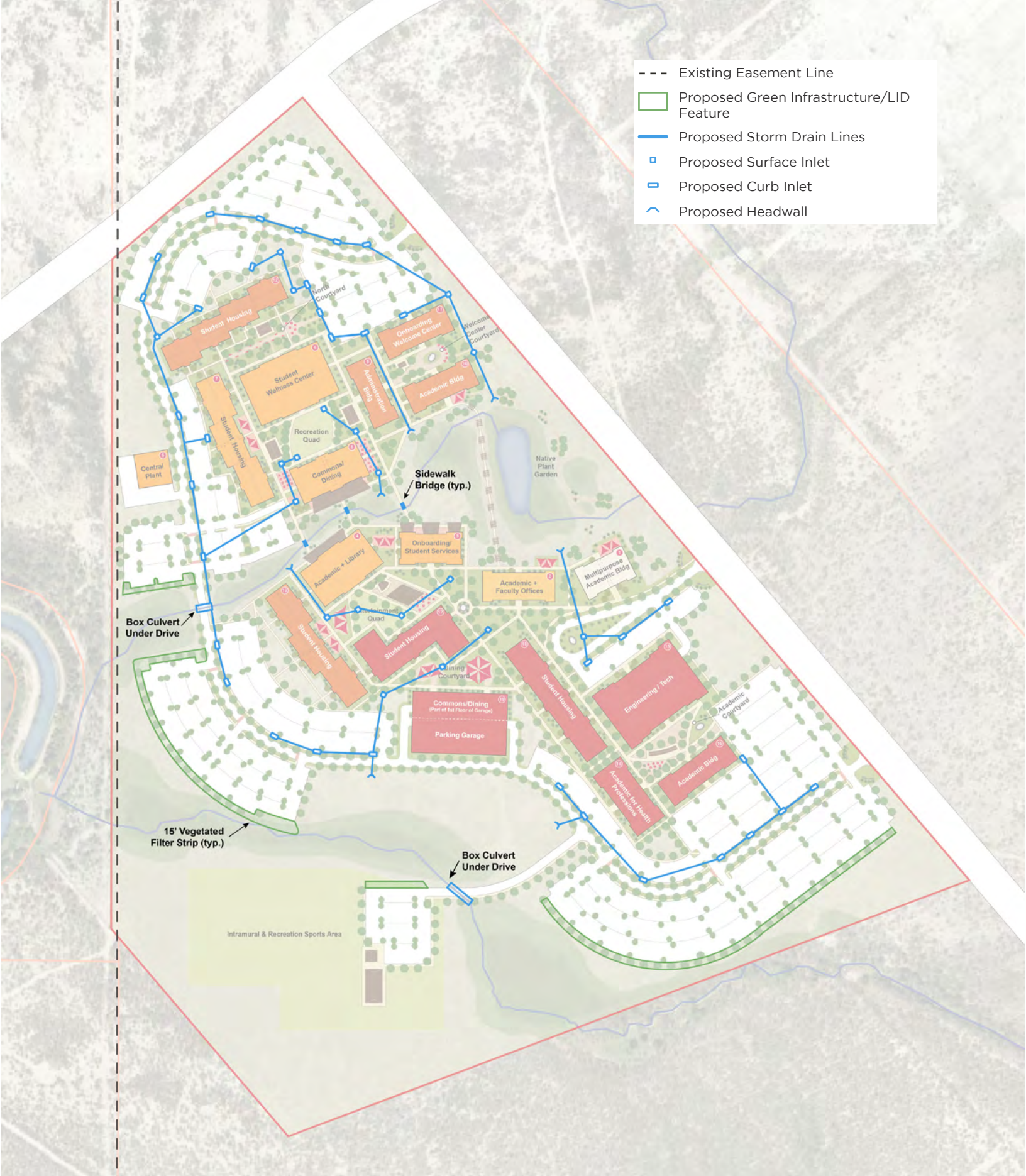


Map 18. Utility Master Plan - Electrical

Scale: N.T.S.

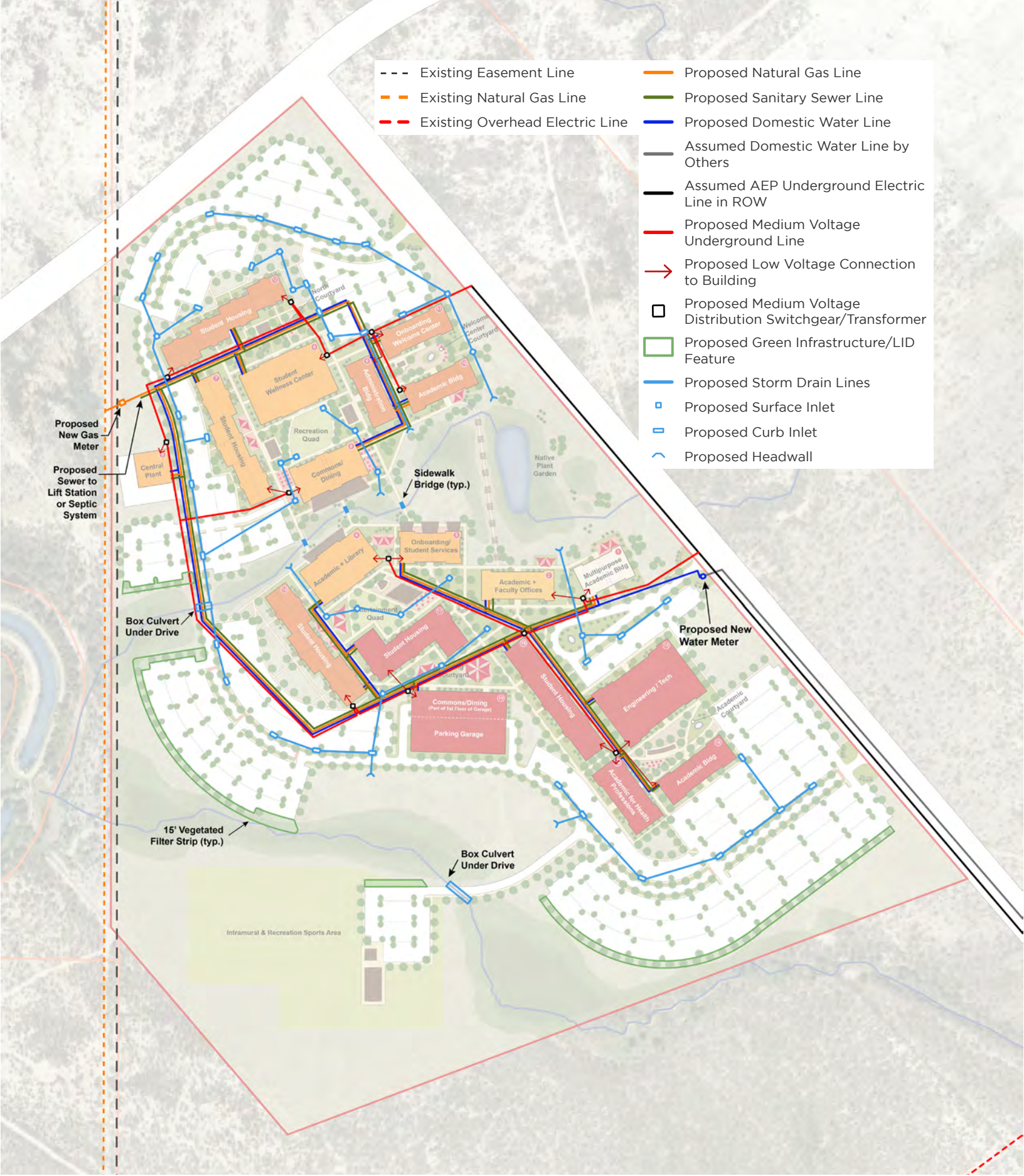
STORMWATER

The basic drainage system will consist of surface inlets, curb inlets and storm sewer laterals to convey site flows to the two existing tributaries. Flows from perimeter parking lots will be allowed to sheet flow across engineered vegetated filter strips, helping maintain the water quality entering the downstream creek. The existing freshwater pond and tributaries will remain primarily untouched, with buffers used to create native plant gardens and recreational areas. Box culverts will be utilized where the roads cross the tributaries, to maintain safe passage during heavy rainfall events. The proposed site plan includes various sidewalks that also cross the tributaries. Pedestrian bridges are proposed for these crossings as a low impact improvement and to help promote a connection to nature.



Map 19. Utility Master Plan - Stormwater

Scale: N.T.S.



Map 20. Utility Master Plan - All Utilities

Scale: N.T.S.

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