Campus Master Plan 2017

Texas School for the Deaf

Completed for the Texas Facilities Commission & Texas School for the Deaf

PARKHILLSMITH&COOPER

Introduction

In 2015, the 84th Texas Legislature authorized an update to the Texas School for the Deaf (TSD) campus master plan. This master plan is an update and continuation of previous well-done master planning efforts.

The master plan benefits from a TSD capital asset improvement program that also includes a facility condition assessment and deferred maintenance construction program. All of these facets were authorized by the 83rd Texas Legislature. The master plan complements the condition assessment and deferred maintenance construction program to provide long-term value for TSD and Texas taxpayers. Accordingly, the master plan emphasizes providing facilities that support the TSD strategic plan while minimizing facility cost of ownership.

The master plan summarizes the facility improvements and justification to support the TSD strategic plan. The intent of the main body of this update is to summarize the history of TSD facilities, TSD strategic mission, stakeholder input, facility analysis, facility needs, space demands, conceptual plans, evidence-based justification for improvements, design guidelines, and an implementation plan.

Thanks to the TSD and community stakeholders for their contributions in the development of this master plan update.

Acknowledgments

Greg Abbott, Governor
Dan Patrick, Lieutenant Governor
Joe Straus, Speaker of the House
The Texas 84th Legislature

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City of Austin
South Central Waterfront Team
South Congress Business Association
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Texas Historical Commission

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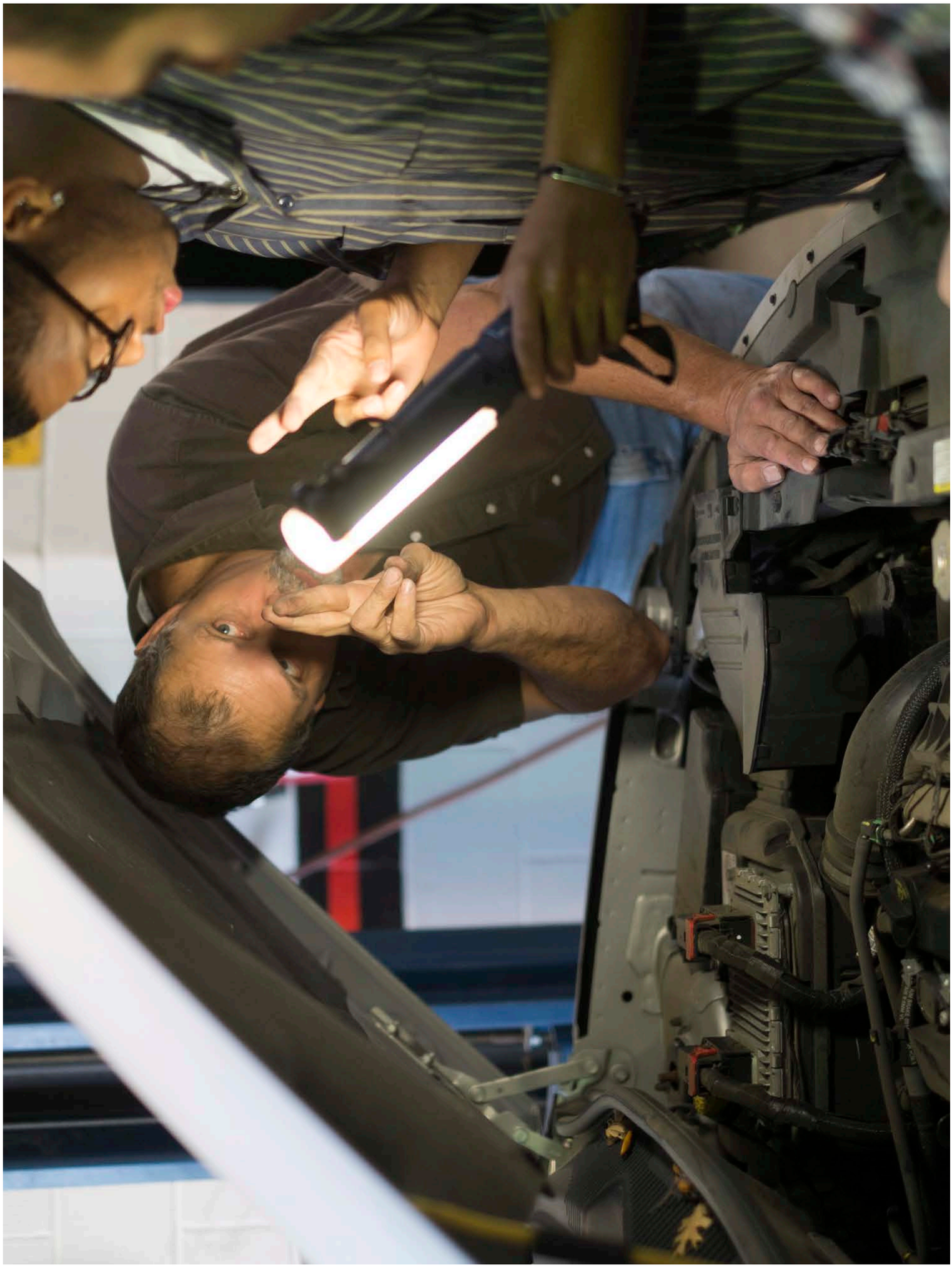


Executive Summary

The Texas School for the Deaf (TSD) Campus Master Plan builds on previous planning efforts. The TSD Campus Master Plan documents the planning process, stakeholder preferences, needs for each program, evidence-based justification, strategies for long-term facilities value and implementation. This master plan should be considered a living document, needing updating and adjustment every few years as conditions change.

Key Drivers

The TSD Campus Master Plan Update is based on key drivers that define the principles of the planning process.

- Align facilities with the TSD Strategic Plan.
- Current space utilization and forecasted enrollment growth.
- Optimize facilities by maximizing the impact on student achievement.
- Stakeholder and leadership input validated with evidence-based peer data.
- Improvements based on deaf space design principles.
- Preserve campus zoning for multiple proximities and safety.
- Preserve the heritage of the campus architecture and deaf community.
- Long-term facility value for the citizens of Texas.

Process

The master plan process for TSD consisted of the following phases:

- Assess and analyze existing facility and site conditions.
- Ongoing stakeholder engagement and feedback (in all phases).
- Analysis of TSD strategic plan and programs.
- Enrollment forecasting and space needs modeling.
- Validate evidence-based justification for improvements.
- Validate cost estimates and improvement sequencing.
- Validate cost of ownership and long-term value modeling.
- Establish design guidelines.
- Measure and celebrate success.

Success Measures

- The success of the Master Plan Update can be measured in the following ways:
- Align facilities with the TSD strategic plan.
- Maximize facility features that have proven to impact learning.
- Guidance for improvements that enhance deaf space design.
- Minimize facility cost of ownership.
- Preserve the heritage of the architecture and the deaf community.
- Blend with and enhance the surrounding community.
- Secure funding for improvements.

Facility Renewal

The majority of existing buildings are in fair to good condition, given their age, and worthy of preservation. Repurposing of some buildings is recommended to make the best use of existing buildings. Long-term cost of ownership analysis indicated two facilities should be considered for replacement: the auditorium and the cottages.

Accommodate Increasing Enrollment Trend

Based on a continuing enrollment trend, the campus will grow from 580 students to over 700 in the next 10 years. Enrollment forecasts are based on three methods of analysis, all of which indicated similar results. This growth will result in the need for additional building space. Using evidence-based peer metrics, the primary need to accommodate a growing student population will be for additional academic space, athletic space, some residential space and corresponding support space. The master plan proposes repurposing campus administration space currently in academic buildings to classrooms to keep students in the appropriate academic building and minimize classroom additions.

State-wide Outreach Program

TSD also provides outreach services to many of the 7,000 deaf and hard of hearing students across Texas that do not attend TSD. The staff that serves these students and the districts they attend, have their offices on the TSD campus. The master plan includes facilities for outreach staff, training of visiting students and training of district staff that serve non-TSD deaf students.

Campus Zoning

Campus zoning is enhanced by locating housing adjacent to academic buildings and academic buildings adjacent to core facilities. To minimize cross traffic of age groups, the age progression of the campus is from north to south, with infants at the north end progressing to transitional (high school graduates through 21 years of age) students at the south end of the campus.

Facility Impact on Learning

Decades of research indicate certain facility features have a positive impact on student achievement, particularly at risk-students. These features include acoustics, lighting, thermal comfort, air quality and adequate space. Improvements to all of these features are included in the master plan scope. The master plan also includes improvements to deaf space design building features.

Master plan estimated cost in 2016 dollars	$99 Million
Estimated cost of ownership savings due to strategic renewal and space efficiency	$184 Million

Master Project Schedule and Legend

Note: Solid color denotes new construction. Solid color with hatching denotes renovation and repurposing of existing buildings. Color dashed outlines denote demolition of existing structures. Finally, half-tone shading denotes site improvements.

Phase 1

- **1-A** New Toddler Center
- **1-B** Repurpose Clinger Gym to practice/play gym, elem activity center
- **1-C** New flex multi-purpose/theater to replace auditorium
- **1-D** Reconfigure Ford photo lab/culinary arts to three CTE programs
- **1-E** New Central Service Center
- **1-F** Site improvements (parking, roads, covered walks, accessibility)

Phase 2

- **2-A** Repurpose portions of dorms to create residential learning kitchens
- **2-B** Move Interpreters from cottage to ERCOD/Toddler Buildings
- **2-C** Repurpose Deaf Smith Building to family services and translators
- **2-D** New Seeger multipurpose workout room and locker addition
- **2-E** Upgrade baseball/softball practice facility
- **2-F** Expand CTE to north end of Pease Building and create Tech lab
- **2-G** Remove portables
- **2-H** Demolish cottages, old boiler plant, and site restoration
- **2-I** New Student Center, flex learning space
- **2-J** Stadium upgrades (synthetic turf, track upgrade)
- **2-K** Locate Transitional housing at south end and add two units
- **2-L** Site Improvements (landscaping, sustainability, fencing, Building Control Network)

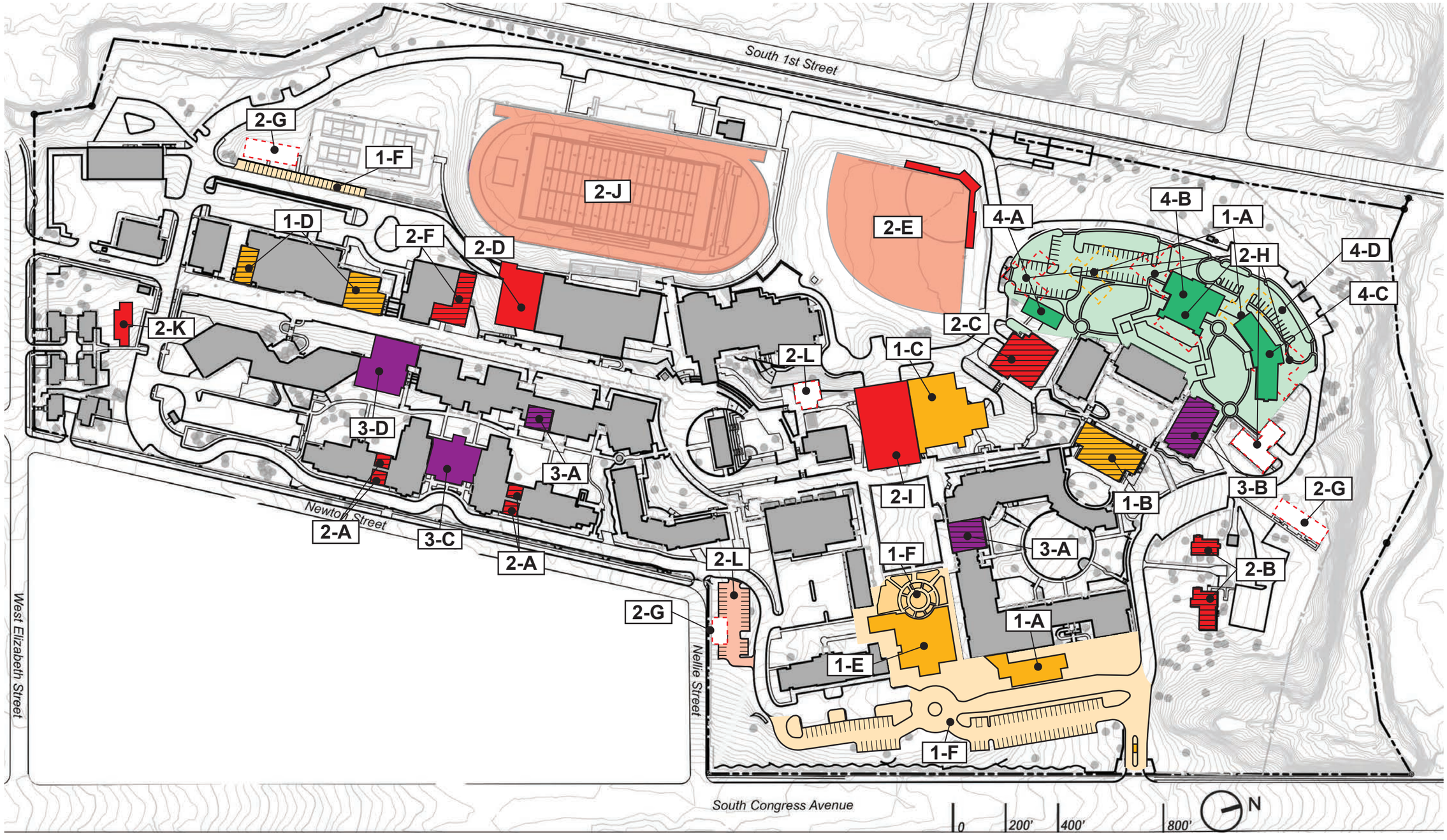
Phase 3

- **3-A** Repurpose ES/MS/HS admin space to academic use
- **3-B** Repurpose existing Transitional housing to special needs
- **3-C** New HS commons between Koen and Lewis halls
- **3-D** MS/HS/CTE addition per enrollment change

Phase 4

- **4-A** Second central plant
- **4-B** Outreach and applied research center
- **4-C** Outreach and applied research center housing
- **4-D** Site work (electrical feed/IT infrastructure) and parking for outreach and applied research center

Campus Master Phasing Plan n.t.s.



Texas School for the Deaf | 2017 Campus Master Plan

Master Plan Improvements by Phase and Location

Phase 1

Toddlers Building
Due to lack of space in the Elementary building, the toddler program was moved to the old superintendent's house, currently known as the Toddler building. The program has outgrown the available space. Therefore, the toddler program will be relocated to a new addition at the Elementary for proximity to related programs.

Clinger Gym
Built in 1928, Clinger Gym plays a vital role in TSD campus history. Code violations and energy efficiency of the building envelope will be addressed in the renewal program. Once the issues are resolved, the vacated lower levels will be repurposed to an elementary multipurpose activity space and the historic two-lane bowling alley will be restored.

Auditorium Building
Due to deaf space deficiencies, accessibility deficiencies and failing building systems the auditorium will be replaced with a 750-seat multipurpose flex theater facility. This facility can house distance learning, performing arts, meetings and large groups. The U-shape configuration will conform to deaf space design guidelines.

Ford Building
Due to the expansion of some Career and Technology (CTE) programs, the existing space will be repurposed and the multipurpose meeting room will be relocated to the new central services building to make room for CTE programs.

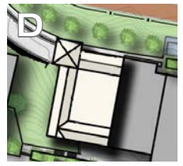
Central Services Building
Administrative activities are spread out across the campus, depending on available space. Admissions and Human Resources are located in temporary trailers that are past their life span. Relocating administrative activities to the Central Services building will allow additional classroom space in academic buildings and the removal of temporary trailers.

Phase 2

Koen and Lewis Dorms
The current configuration of the dorms does not allow for multiple students to be in the public spaces and still be able to communicate with one another. Therefore, existing spaces, including kitchens, will be renovated to improve accessibility, improve deaf space layout and create a more home-like atmosphere.

Educational Resource Center on Deafness (ERCOD) Building
The ERCOD building is currently housing the Outreach staff who have outgrown the space and will be moved to the Central Services building in Phase 1. Since the existing cottages will be demolished, the Interpreters will be relocated to the vacated ERCOD building.

Deaf Smith Center
The translators and family services staff currently do not have enough space. Therefore the Deaf Smith Center will be repurposed for them. The Student Center will be relocated from the Deaf Smith Building to the new Student Center Building.

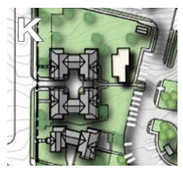


Seeger Gymnasium
The campus lacks space and locker rooms to house all TSD athletic and after school programs. Therefore, an indoor multipurpose/athletic space and four lockers rooms will be added to the building.

Outdoor Athletic and Physical Education Facility Upgrades
The backstop, dugouts and batting cages at the baseball/softball practice facility will be upgraded for safety and functionality. Synthetic turf will be installed at the football field to allow more multipurpose use. The existing six-lane track will be expanded to eight lanes to accommodate track and field meets and more community use.

Pease Building
Relocating administrative activities to the Central Services building in Phase 1 will allow the Pease building to be repurposed to a flexible Career and Technology lab. Information Technology space will remain in its current location.

Student Center
The Student Center will be relocated from Deaf Smith to the new Student Center. Students after school activities will be housed in the Student Center, as well as distance learning space.

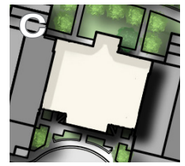


Transitional Housing
Due to the forecasted enrollment growth of transitional students, to be consistent with the campus zoning plan and to the growing transitional student population, a two-story housing unit will be added next to other existing transitional housing on campus.

Phase 3

Elementary/Middle School/High School
Relocate administrative and mainstream special program rooms to create additional classrooms for the growing student population.

Existing Transitional Housing
Due to the needs of transitional students, Phase 2 created new transitional housing at the south end of campus by the other transitional housing and transitional classrooms. The vacated dorm at the north end of the campus will be repurposed to a special needs dorm.



High School Commons
Students that live on campus do not have anywhere to socialize, do homework, or have access to after-hours computer labs. High School Commons will be located between Koen and Lewis Dorms to serve as daytime and after-hours learning and socialization space.

Middle School/High School Addition
Due to the growing population of the Middle School/High School, the addition will create new space to house long-term educational space needs.

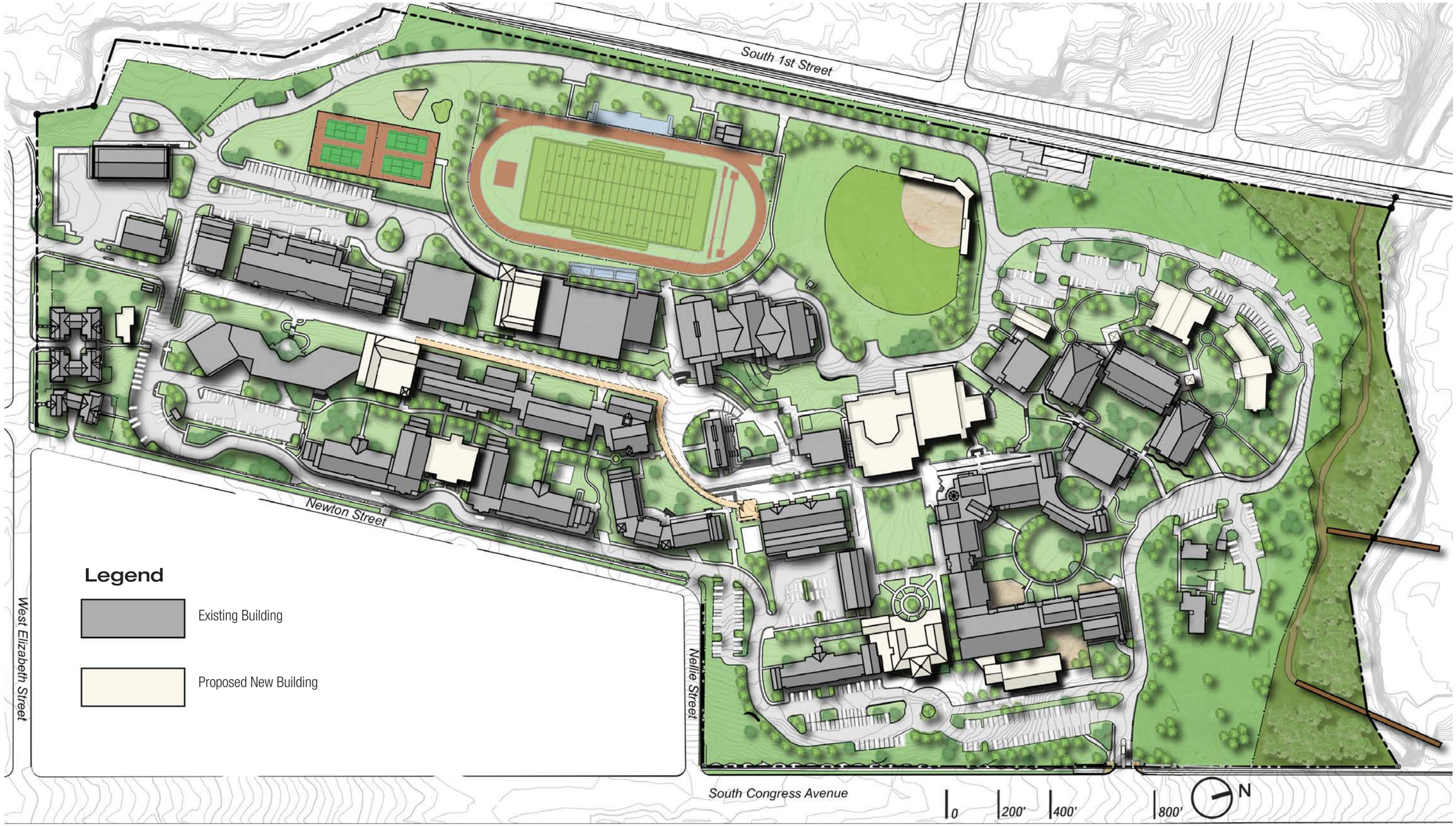
Phase 4

Second Central Plant
An additional central plant will be needed to supplement the current central plant, which will reach capacity in the early phases of the master plan. This central plant will support the Outreach and Applied Research Center and other facilities.

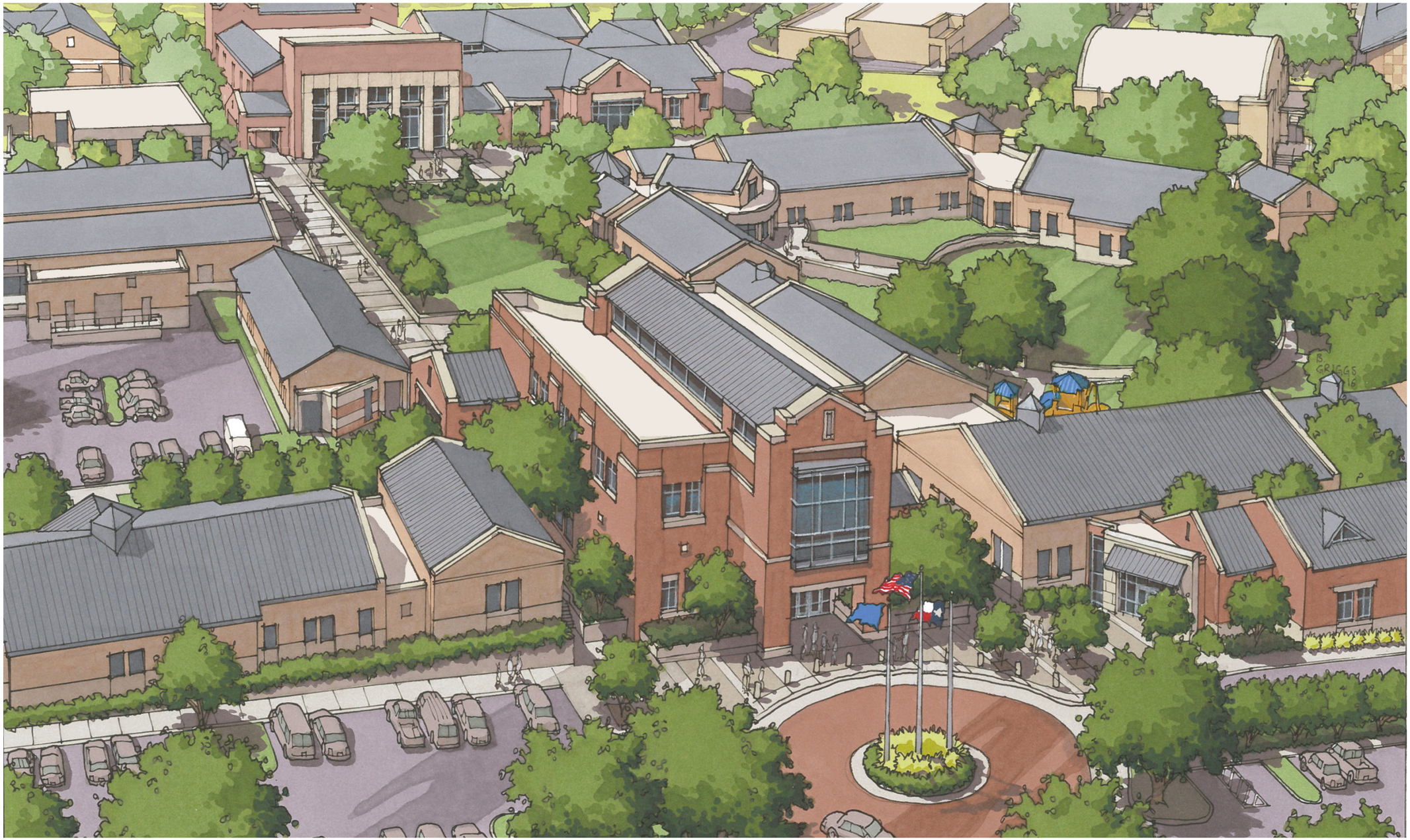
Outreach and Applied Research Center and Visitor Housing
Deaf students in the state of Texas who do not attend TSD are served by the outreach staff. The building will house the Outreach staff, deaf space and learning research center. Visitor housing will accommodate visiting deaf students, families and visiting researchers.

***This list does not include abatement and demolition projects*

Proposed Campus Master Plan, n.t.s.



View Looking Southwest Overhead of the South Congress Avenue Entrance



View Overhead of New East Parking Area Looking Northwest Towards Central Services

View North Down the South Main Pedestrian Mall

View Looking Northeast Towards Multipurpose Building and Theater

PROCESS

Process

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- Ongoing stakeholder engagement and feedback (in all phases).
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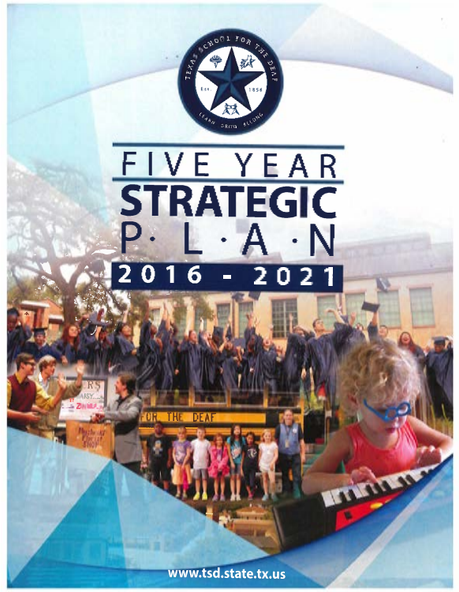
Aligning Facilities with TSD Strategic Plan

A key driver for the master planning process is to align facilities with the TSD Strategic Plan. The following summarizes concepts from the TSD Strategic Plan and other TSD planning documents that relate to facilities

- Communications (space design, technology, wayfinding).
- Deaf space design concepts incorporated.
- Data-based decision making.
- Facilities that match programs, now and future.
- Facilities that accommodate learning and living spaces.
- Interdisciplinary curriculum, critical thinking, problem solving.
- Proficiency in 21st Century technology skills and tools.
- 1:1 laptop initiative, moving toward tablets.
- Assistive technology such as interactive white boards, tablets, digital science sensors, student response systems, LCDs and document cameras.
- High quality technology cabling.
- Video phones — a primary form of communication.
- Global green grant awarded to TSD.
- Career and Technology space will be needed to comply with the Texas 83rd Legislature's House Bill 5.
- CTE programs including web technology, AV production, digital/interactive media, printing/imaging technology, computer maintenance, gaming technology, robotics/automation.
- New CTE programs include forensic science, construction technology and theater/media communication.



TSD Mission Statement

Mission

Texas School for the Deaf ensures students learn, grow and belong in a language-rich environment while supporting students, families and professionals through statewide outreach services.

Core Values

Education is a responsibility shared by the students, family, school and community.

The development of the whole person socially, physically, intellectually, culturally and emotionally is imperative to a positive identity, self-worth and lifelong success.

American Sign Language and English are woven into the fabric of TSD life building healthy Deaf identities and positive self-worth.

An interdisciplinary curriculum that integrates technology in academically engaging learning environments prepares students to become critical thinkers, collaborators and decision makers.

Outreach Services provide resources and support to the state's deaf and hard of hearing students, their families and the professionals that serve them.

Treating students and staff with dignity and respect in an inclusive community that values diverse abilities, needs and interests is crucial to creating a healthy and productive environment.

Vision Statement

Texas School for the Deaf aspires to be a premier leader in bilingual education that challenges each student to reach their full potential.

East
Genres
Mythology
Play
Fable
Nonfiction
Autobiography
Poem
Aa Bb Cc Dd Ee F
Jory Valencia

HISTORY

C

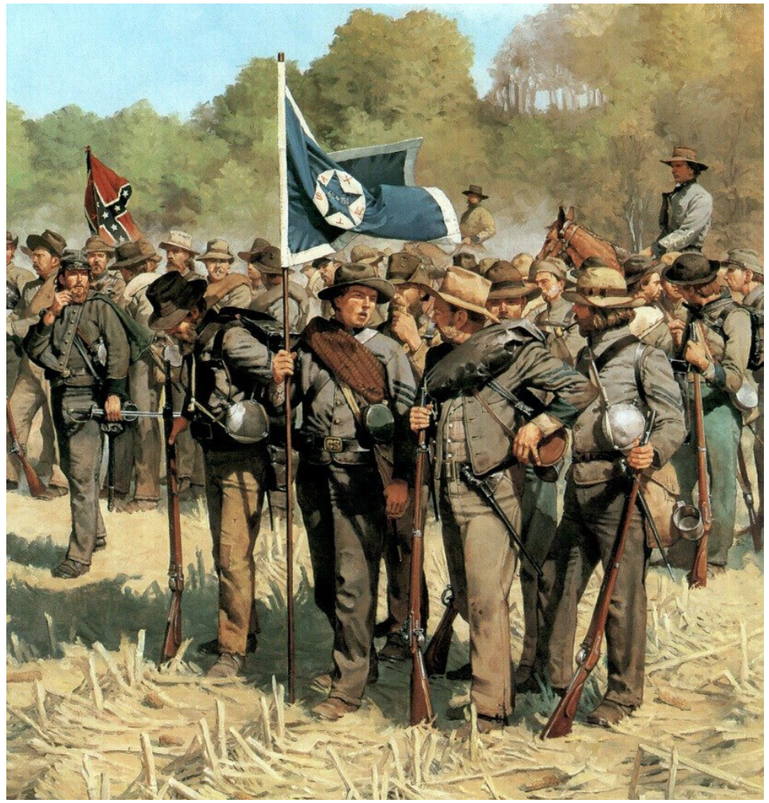
History

Background History and Understanding

Even before the rich history of the TSD institution began, the land where the Texas School for the Deaf resides today have served as a crossroads of early Texas history. Native American inhabitants, including the Tonkawa, and later the Comanche and Lipan Apache had been observed in the areas both north and south of the Colorado River, and evidence of prior use of the area by Spanish explorers and missionaries is also a possibility, as an 18th century mission had been established just northwest of the TSD Campus in present-day Zilker Park. Furthermore, the higher grounds of the TSD Campus had been well documented as a training site for local garrisons of the Confederate States Army. This myriad of past historical activity raises a valid concern that prudent efforts must be taken by future design teams in the implementation of this master plan to investigate any cultural deposits within the grounds affected by future development of the campus.

The campus, grounds, and architectural heritage of the Texas School for the Deaf has been indelibly shaped through nearly 160 years of vivid architectural vernacular. This heritage is broad in its sources, from the Second Empire and Neoclassical styles predominant in Texas public architecture from the latter half of the nineteenth century into the first quarter of the twentieth century. Though from many vantage points into the campus, and thanks in large part to the 1994-1998 expansion of the institution, the TSD campus has the air of an institution with a generally contiguous architectural style. In truth, this is not the case, and further, very little of the School's architectural fabric predating 1956 survives today. Nonetheless, particularly amongst alumni, Austin historians, and residents of the South Congress neighborhood in which TSD resides, the general history and architectural fabric of TSD is an invaluable treasure to the city and state at large. This report will explore that heritage in depth, and analyze the following:

- Understanding the architectural and planning evolution of the TSD campus since 1879.
- Architectural styles, massing, and characteristics incorporated onto the campus over its history.
- Identification of buildings of historical age and character that warrant retention and/or rehabilitation.



Above: Artist's depiction of Texas infantry volunteers of the Confederate Army; not unlike those bivouacked on the grounds of the TSD Campus during the Civil War. Cannonballs and other artifacts were discovered during construction and demolition of the School's Victorian-era buildings (see image credits).

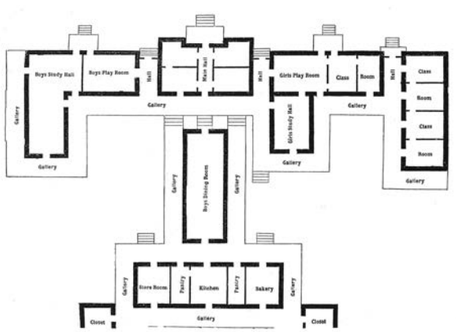
Above: A later 19th-century image of a Comanche warrior and horse (see image credits).

Founding History

It is speculated that the hilltop portion of the TSD campus had been considered as early as 1839 as a potential home for the State Capitol, but President of the Republic Mirabeau B. Lamar preferred a site north of the Colorado River as a plausible pretense to drive out the Comanche Indians living there. Thus was the prominent quality that the TSD site had then, and still has even today overlooking Downtown Austin to the north.

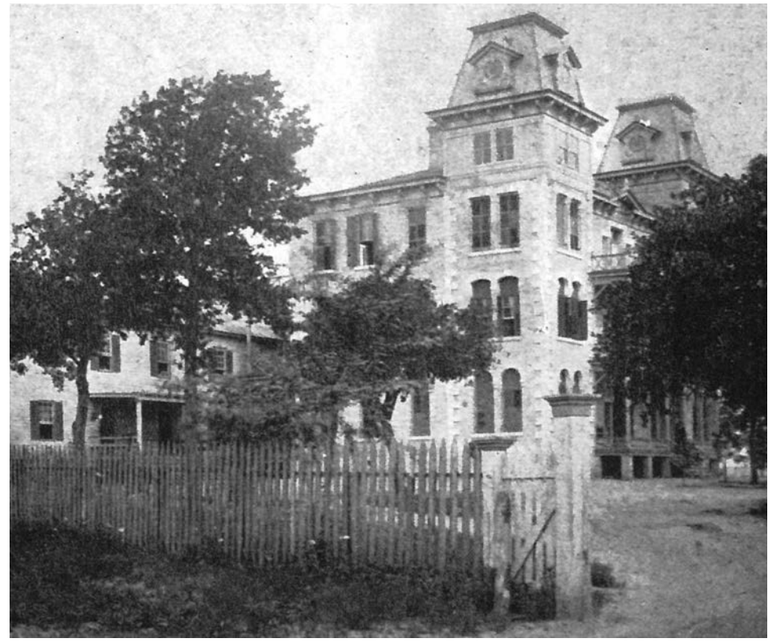
In its prior name as the Texas Institution of the Deaf and Dumb established in 1856, the school would eventually find its home on the grounds of the land known as "Isaac Decker League No. 20," situated south and opposite of the Colorado River from the newly-founded capitol city of Austin. None of the early buildings on site — single-story log cabins later replaced by two-story wood-framed structures built during the Institution's first two decades — exist today. During the Civil War, historical record suggests that Confederate troops bivouacked and trained on the campus grounds — this is known due to the salvaged cannonballs found within the wood framing cavities of the 1877 Administration Building during its 1956 demolition that were likely found by builders during original foundation excavation.

In fact, that 1877 two-story administration building would be the first permanent edifice built on campus. At least the original building, and perhaps an 1879 addition, were designed in the Second Empire style by noted Austin architect Frederick E. Ruffini, who had recently moved to the city. The building was adorned with partial brick and partial wood-clad exterior, pronounced quoins, a mixture of wood and cast iron railings and trim, and Victorian-era eaves, ancons, and window shutters. The aforementioned 1879 building addition increased the building height to three stories and added the first iteration of two Second Empire mansard towers to the northeast and northwest corners of the main building façade — towers similar to John Mills Van Osdel's design for Old Main Buildings at the University of Illinois at Urbana-Champaign and the University of Arkansas. Further expansion of the Main Building in 1883, designed by Taylor & Williams, added classroom and study hall wings to the east and west. Subsequent renovations and additions completed between 1888 and 1892, designed by Ruffini associate Burt McDonald, would transform the main façade into its final form, capping the mansard belfries with pointed cupolas which created the image of the iconic "Mule Ears" form, as well as adding a fourth floor to the central building, and replacing the wood-framed stack of porches over the main entry with a white-trimmed neoclassical four-column frontispiece with second-floor promenade.



Left: The plan of the TSD Main Building upon completion of renovations and additions designed in 1883 by Taylor & Williams developed a network of buildings connected by three stories of promenade galleries that would remain in place until the building's demolition in 1956.

Above: Portion of a July 1889 topographical plat plan of the City of Austin with a highlight box indicating the grounds of the Institution of the Deaf and Dumb — boundaries largely unchanged to this day. (Image courtesy of Austin History Center).



Above: A view looking southwest towards the expanded Main Building of the Texas Institution for the Deaf and Dumb, taken sometime between 1878 and 1883. The twin towers lack the full cupola and the building is missing its wings and fourth floor that would establish its iconic appearance into the 1950s (Image courtesy TSD / Hovinga)

In the course of this postbellum development of the Institution, other secondary buildings were added to the campus physical plant, most notably a stone-and-quoin-clad two-story stable building (1883), laundry building (not to be confused with the 1925 Laundry Building), and vocational trade training buildings. None of these buildings remain today. Buildings were not situated in any specific organized plan or arrangement, other than the main building being situated so that its front façade faced north towards Austin and the State Capitol. A main drive entry off of South Congress Avenue — unchanged even today — hooked south toward the Main Building and a Victorian water fountain interposed within a five-pointed star of Texas, installed by Institution Superintendent W.A. Kendall in 1887.

Neoclassical Expansion: 1902-1925

Above: Final appearance of the Main Building, circa 1910 (Image courtesy of TSD / Hovinga)

Beginning with the design of a new School Building by Houston architect Olle J. Lorehn in 1902, TSD's neoclassical architectural style became solidified with the addition of further buildings on campus. The Swedish-born Lorehn had completed a range of noted work in Houston, including the Houston Post Building and Houston's supposed first skyscraper — the original Binz Building. The 1902 School Building, sited adjacently east of the Main Building, was one of the first buildings to introduce an architectural grammar to TSD that resounds today. Lorehn designed paired-column entry porches on all four facades that were drawn upon the 1892 addition to the Main Building. But while Lorehn included metal hip roofs with ridge finials to mimic the wing roofs of the Main Building, the prominent north and south facades featured the new element of quoined gables with masonry-detailed circular windows at the attic level. This architectural form would not be lost on other architects working on the TSD Campus for the next quarter-century.

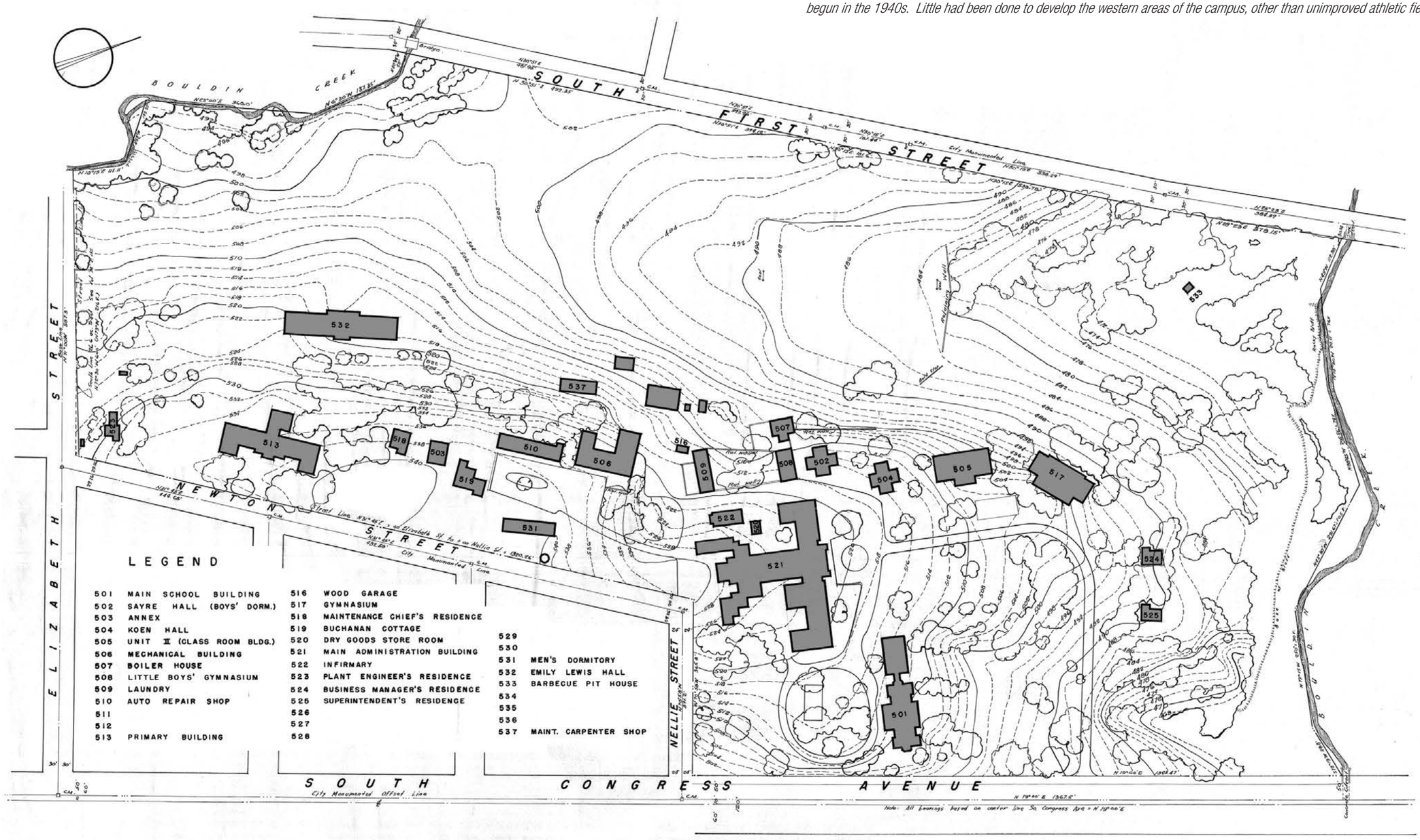
Above: East and west elevations of Kuehne, Chasey & Giesecke's 1915 Primary Building. The use of Roman-revival double-cross windows at the wing ends of the west elevation were new to the campus. (Image courtesy of the Texas State Archives).

Above: South Elevation from Lorehn's drawings for the 1902 School Building. This building too did not survive the 1956 update, when much of the campus was razed for the construction of modernist-era facilities (Image courtesy of the Texas State Archives).

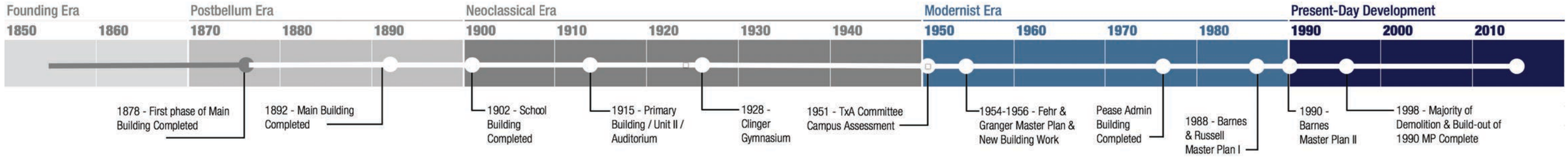
Campus Site Plan — Circa 1951 — n.t.s.

Between 1914 and 1952, a range of buildings would be added to TSD, designed mainly by the firms of C.H. Page & Bros., and Kuehne, Chasey, and Giesecke — both inescapable firms within the realm of Austin architecture. The largest of these was Bertram Giesecke's 1915 Primary Building, situated just west of the tee-intersection of Newton Street and Gibson Street in the southeastern area of the campus. This building, though it borrowed the columned entry features of the Main Building and School Building, was a more generic revival-era building, trading first floor rusticated brick coursing for earlier quoin details seen on campus. The building was notable as it did introduce a range of vernacular that Barnes Gromatzky Kosarek (BGK) would draw upon in their 1990s redevelopment of the TSD Campus. The same year as the Primary Building, Page would also design a two-story height brick-clad auditorium addition to the School Building. Giesecke — reformed in 1921 as Giesecke & Harris — designed further buildings over the next decade, including a laundry building, a boiler building, and a gymnasium with basement known as the Cora Clinger Gymnasium. Clinger — the northwestern-most building on the campus, intermixed neoclassical brick-and-stone detailing with unique polychrome tile header details, and featured the novelty of a two-lane basement bowling alley.

Even through and after the Second World War, the TSD Campus remained largely the same conglomeration of buildings from its neoclassical era, minus a handful of Moderne and early modernist-era buildings. Interestingly, the use of the "500" system of building numbering had begun in the 1940s. Little had been done to develop the western areas of the campus, other than unimproved athletic fields.



The Texas School for the Deaf Campus: 1902-1956

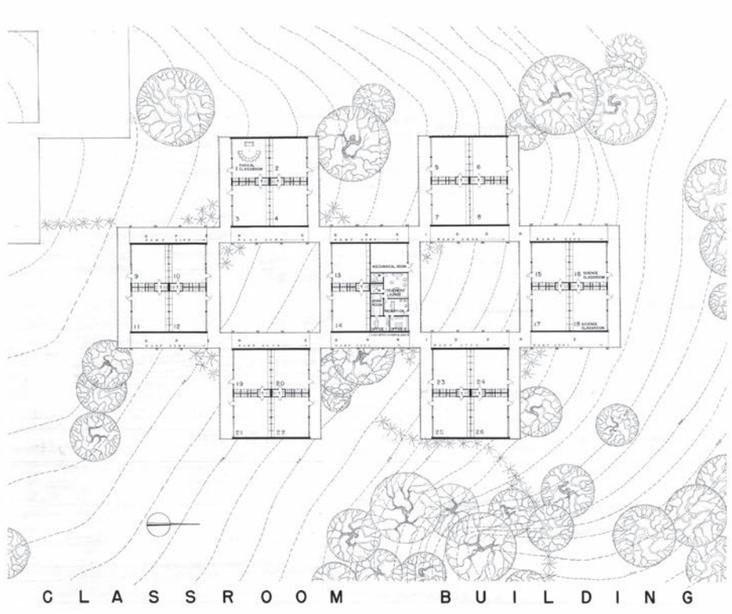


Fall of the Mule Ears and Rise of the Modern

The Texas School for the Deaf, recently renamed by the Legislature in 1949 from its prior official name as the Deaf and Dumb Asylum of Texas, was, even into the 1950s, a campus largely defined by the 50 years of campus architecture built from after the Civil War until the decade after World War I. C.H. Page and Bros. had continued to receive design commissions, including a sleek, Moderne-styled Mechanical Building in the 1930s, and dormitory work which resulted with the two-story International-style Emily Lewis Hall, completed between 1951 and 1952 at the southern end of the campus. But elsewhere, existing buildings like the Main Building had not received substantial renovation or life safety improvements in decades, and the facilities conditions on the campus were largely regarded by the public, the state, and in particular by the media, as scandalous. TSD's authority-having-jurisdiction — at that time the State Board of Education — appointed in 1951 a volunteer committee from the Texas Society of Architects to survey the campus and buildings to make recommendations for the improvement of living and learning conditions to students on the campus. One of the committee member's quotes in the matter explained conditions best:

> *"By far, the majority of the buildings are not even susceptible to renovation, except to salvage stone or brick from them."*
> *— Charles Granger, AIA*

It so happens that Granger and his partner, Arthur Fehr, were members of the Society's review committee, and they would have a profound impact on the total reshaping of the TSD campus and its architecture for the next 15 years. Based on the findings of the committee, in a 1954 special session of the State Legislature, Governor Allan Shivers signed into law funding measures for the first $2.38 million phase of a three-phase $6.2 million physical plant overhaul of the campus. The dilapidated conditions of the campus entirely overshadowed any predisposition to rehabilitating and preserving any worthwhile architectural heritage, and given the modernist era of the day, preservation was already a diminished concern. Public and political disgust as to the campus condition ensured that very little of the existing campus would survive the coming purge. The state commissioned the collaborative teaming of two Austin firms — Fehr & Granger and Niggli & Gustafson — both noted design ateliers in the master planning and design of new buildings on the TSD campus. Despite the collaboration, both planning and design implementation efforts were greatly shaped by Arthur Fehr, a UT and Columbia University graduate. Fehr & Granger had just designed O. Henry Junior High School for the Austin ISD and would later design Robert Mueller Municipal Airport. Their resulting decentralized design for the TSD campus emphasized unitized construction of some (20) residential cottages, (11) classroom building units arranged in checker-grid clusters, and an assortment of other buildings.

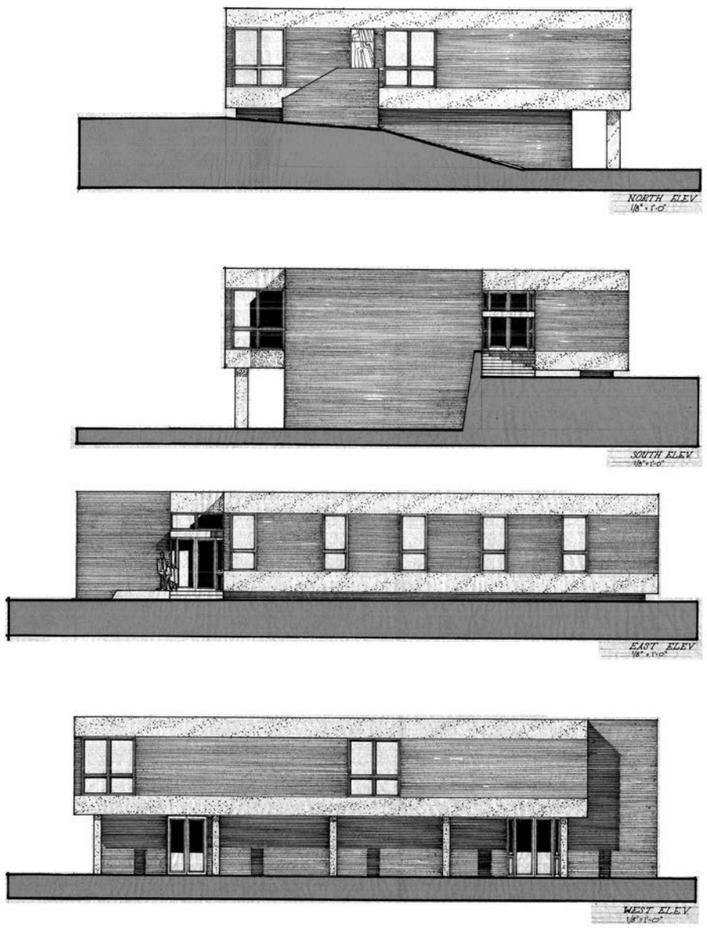


Above: Fehr & Granger's October 1954 design for what would become Building 546. The complex remained relatively low-profile to the ground with its single-story design and thin breezeway roofs (Image courtesy of the Austin History Center).

Beginning in 1956, mass swaths of the TSD physical plant were razed, including the old Koen Hall dormitory (1901, Lorehn), Sayre Hall (the Vocational Technology Building; built in 1899, architect unknown), the School Building and Auditorium, old Stable Building (now a small gym and repair shop), Infirmary, and other buildings as well. On August 29, 1956, a demolition team knocked down the 'Mule Ear' Towers of the Main Building, unveiling a bat and pigeon infestation of the two towers. Only the Laundry Building, Boiler Building, Giesecke's 1915 Primary Building, and Unit II (also known as Building 505), designed by Page in 1912 as a gym and later used for a variety of middle school instruction, P.E., and fine arts education, remained. The designs developed particularly by Fehr & Granger from an education building standpoint represented a clean, simple, modernist approach much aligned to concepts espoused by such as that of the "Sarasota School of Architecture" as well as Eero Saarinen (Granger in fact had worked in the office of Eero's father, Eliel). Two clusters of single-story classroom units — Buildings 545 and 546 — set on the higher ground of the TSD site, were set in a checker-grid of buildings interconnected via a linear grid of breezeways with small courtyards in between. Situated in the northwest, eastern, and southeastern zones of the campus were groupings of single- or two-story living cottages. These low-slope-roofed, brick-clad buildings featured the ability for decentralized preparation of food for student resident meals.

Cottage design and construction continued in small groups into the late 1950s, and during that time, Winfred O. Gustafson (Niggli & Gustafson had dissolved in 1958) proceeded with design of an auditorium to replace the 1915 Page addition to the School Building. Essentially a large masonry monolith cleft into the side of the Campus' west slope, it clearly provided verticality to the new modernist assembly of TSD buildings that Fehr & Granger's cottages and classroom blocks did not provide. Both Gustafson's and Fehr & Granger's work utilized a new blend of brick different darker than that used on the original Main Building, but altogether different than the cream field and terra cotta red quoin brick that buildings such as Koen, the School Building, and Laundry Building had. Only the 1925 Boiler Building, near and southwest of the new Auditorium, had a relatively similar brick blend.

Above: A 1967 campus development plan showing the decentralized assortment of buildings designed by Fehr & Granger (Image courtesy of the Austin History Center).



Above: Following the death of Charles Granger in 1966, Fehr & Granger became Fehr, Granger, Emerson & Associates. That firm continued work into the 1970s for TSD, including the above initial 1968 design for a Library Building designed south of the Laundry Building (509). Through iterations and legislative funding delays, the library would be built out in similar appearance to the four elevations above in 1978. Today the building operates as the Business Services Building. The design reflected the popular shift of the day in modernist design from the thin, less articulated breezeways and awnings of Fehr's earlier classroom and cottage designs to a more austere blend of masonry and heavier-articulated precast and cast-in-place concrete (Image courtesy of the Austin History Center).

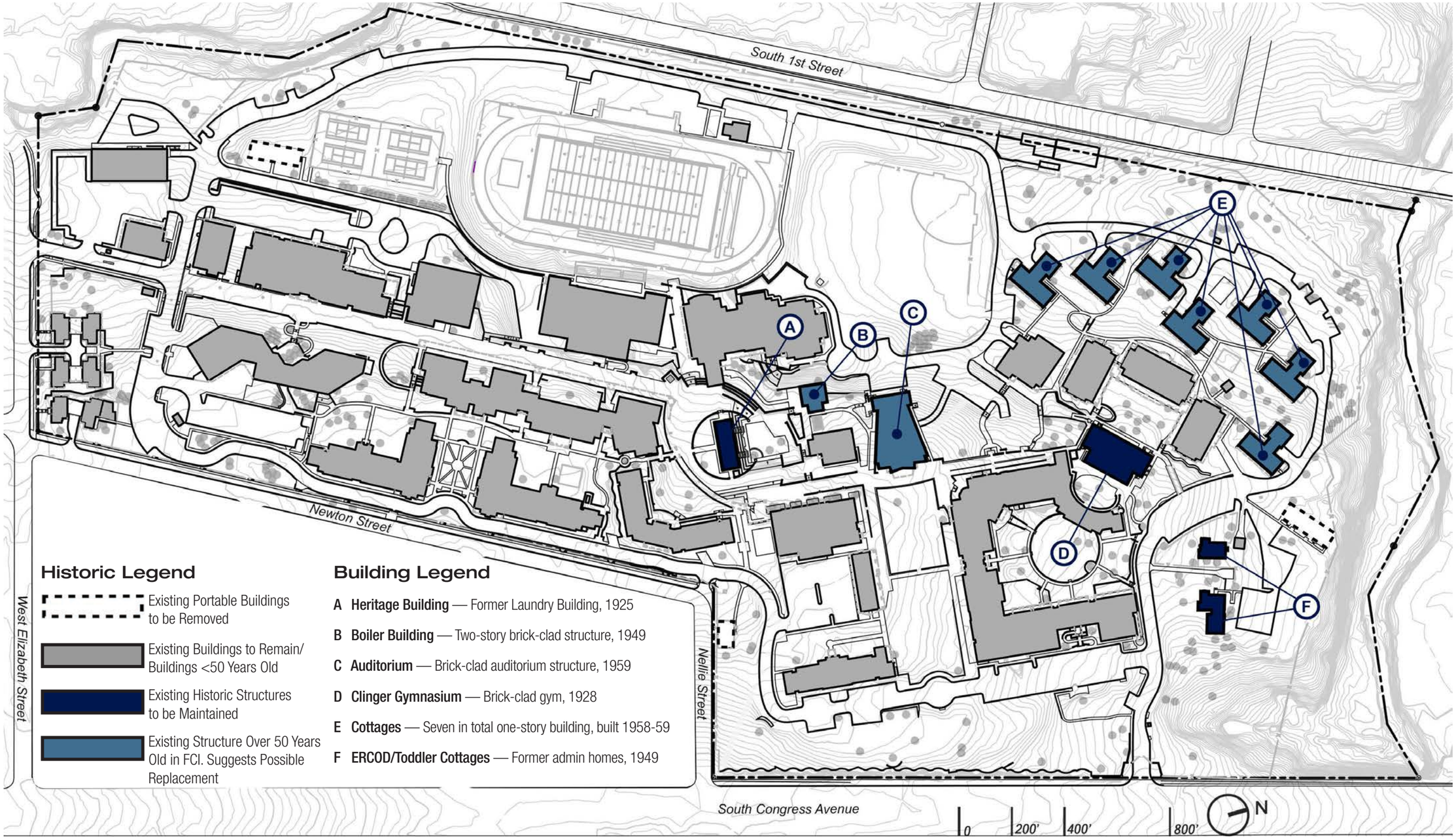
Campus Redesign — Take Two

Though modernist construction designed in part by the successor firm of Emerson-Fehr-Newton continued into the 1970s at TSD, by the mid-1980s the institution had once again reached a crossroads in both the quality of conditions, and the overall future of the South Austin Campus. Following the 1966 integration, the Texas Blind, Deaf, and Orphan School in what would later be identified as the TSD East Campus became part of TSD itself. The East Campus — also known as the old Bull Creek Road Campus — would finally be sold away to the City of Austin in 2001. Yet, at the South Congress Avenue Campus, TSD was now facing the challenges of both older World War I-era buildings — namely Unit II and the Primary Building — suffering from serious educational and life safety deficiencies. Fire alarm systems, egress routes, accessibility, and decaying building envelope issues were only some of the problems that had reemerged since the scandal of the early 1950s.

Further, the campus still lacked a 'sense of place', due in large part to the decentralized nature of Fehr & Granger's modernist-era scheme. There was little, if any, sense of arrival onto campus, while old neoclassical buildings remained intertwined with the more recent, but squat-form architecture of the modernist construction era. Fehr's design had, in its day, been lauded nationally for its forward-thinking approach, in part due to its design intent so as not to shock arriving students with the feel of a harsh institutional environment that structures like the old Main Building clearly conveyed. In an April 1961 issue of *Architectural Record*, Arthur Fehr was quoted as saying: "We felt it too desirable, therefore, to provide a design which would be as 'non-institutional' as possible…" In the process, the institution had shifted to a total polar opposite in terms of campus feel, and was in need of a new overarching architectural identity. The State Legislature had, on many occasions, questioned if the Texas School for the Deaf should even remain at the South Congress Avenue site or not. A January 1987 study commissioned by the Austin City Council analyzed just this possibility based on considerations made in the prior biennium. Thankfully, this was not acted upon, and instead, the TSD Governing Board proceeded in 1988 with hiring Barnes & Russell Architects (formerly Barnes Landes Goodman Youngblood) to assess the campus physical plant and grounds and develop the first master plan in over 30 years to the institution.

Barnes & Russell's design was — much like Fehr & Granger's three decades earlier — sweeping in its intentions to eliminate the existing buildings that were in poorest condition, notably the Primary Building, Unit II, and Emily Lewis Hall, as well as all of the checkerboard-pattern classroom buildings and two-thirds of the residential cottages. Vehicular traffic would be banished from the core of the campus in lieu of new pedestrian malls framed by collections of smaller-scale academic, residential, and student life buildings. Though not acted upon immediately, the design team (now Barnes Architects) revisited the master plan in 1990 and developed a design that largely reflects what would be built out over the next decade. Gustafson's 1958 Auditorium would be retained and renovated into the terminus at the west end of a courtyard framed between elementary education buildings and administration. The Old Laundry Building became the centerpiece to a central ovoid plaza, where the building, now renovated and stripped of utilitarian additions, stands restored today as the TSD Heritage Center. Though the master plan called for the near total demolition of all residential cottages, the same group of cottages proposed to be saved in the 1988 plan (564 through 570) would, in the end, escape demolition.

Right: Barnes & Russell's November 1988 master plan for TSD. The plan would bear many similarities to the firm's revised 1990 master plan for the institution, which would form the bulwark for campus development and construction through the 1990s. Barnes' design would, like Fehr & Granger's design of three decades earlier, result in large-scale razing of the campus, in which by 1998, none of the 1915-era buildings, and less than a quarter of the 1956-1960 buildings would survive (Image Courtesy of the Texas Facilities Commission).



The above campus plan indicates all buildings as they exist in early 2016, and noting any buildings older than 50 years of age noted either in light blue (building recommended for demolition), or dark blue (a building recommended for continued use, renovation and/or rehabilitation and potential adaptive reuse). The plan clearly indicates that very little remains today of both the original campus fabric, both prior to 1928, and even the 1950s-era modernist campus designed by Fehr & Granger and Niggli & Gustafson.

Historical Campus Review Findings

A preliminary report outlining the historical development of the TSD Campus and presence of buildings fifty years of age or older was completed and submitted to the Texas Historical Commission (THC) for project review in accordance with the Antiquities Code of Texas in late spring 2016. The THC completed their project review that summer and submitted their review findings to TFC on August 1 (refer to letter at lower right). As outlined in the Master Plan, the one building eligible for individual listing in the National Register for Historic Places — the Clinger Gymnasium — has been identified for rehabilitation and reuse. Both the TSD and TFC wish to extend their thanks to the THC in their review and involvement in this planning endeavor, and intend to continue that constructive relationship with THC in subsequent implementation of the phases of this Master Plan.

As a component to that, included on this page and the opposite page diagram are requirements for the archaeological surveying of TSD property in the course of future construction which may involve disturbance of buried cultural deposits.

Archaeological Survey Requirements for Future Work

Both the Texas Historical Commission (THC) and Council of Texas Archaeologists (CTA) have established minimum guidelines for the archaeological investigation of grounds such as sites of development identified in the Master Plan. The campus diagram noted on the opposite page identifies sites where the anticipated project scale and/or basement and substructure proposed may result in the disturbance or loss of potential cultural deposits. That diagram notes what anticipated level of prior archaeological survey will be necessary in accordance with THC requirements.

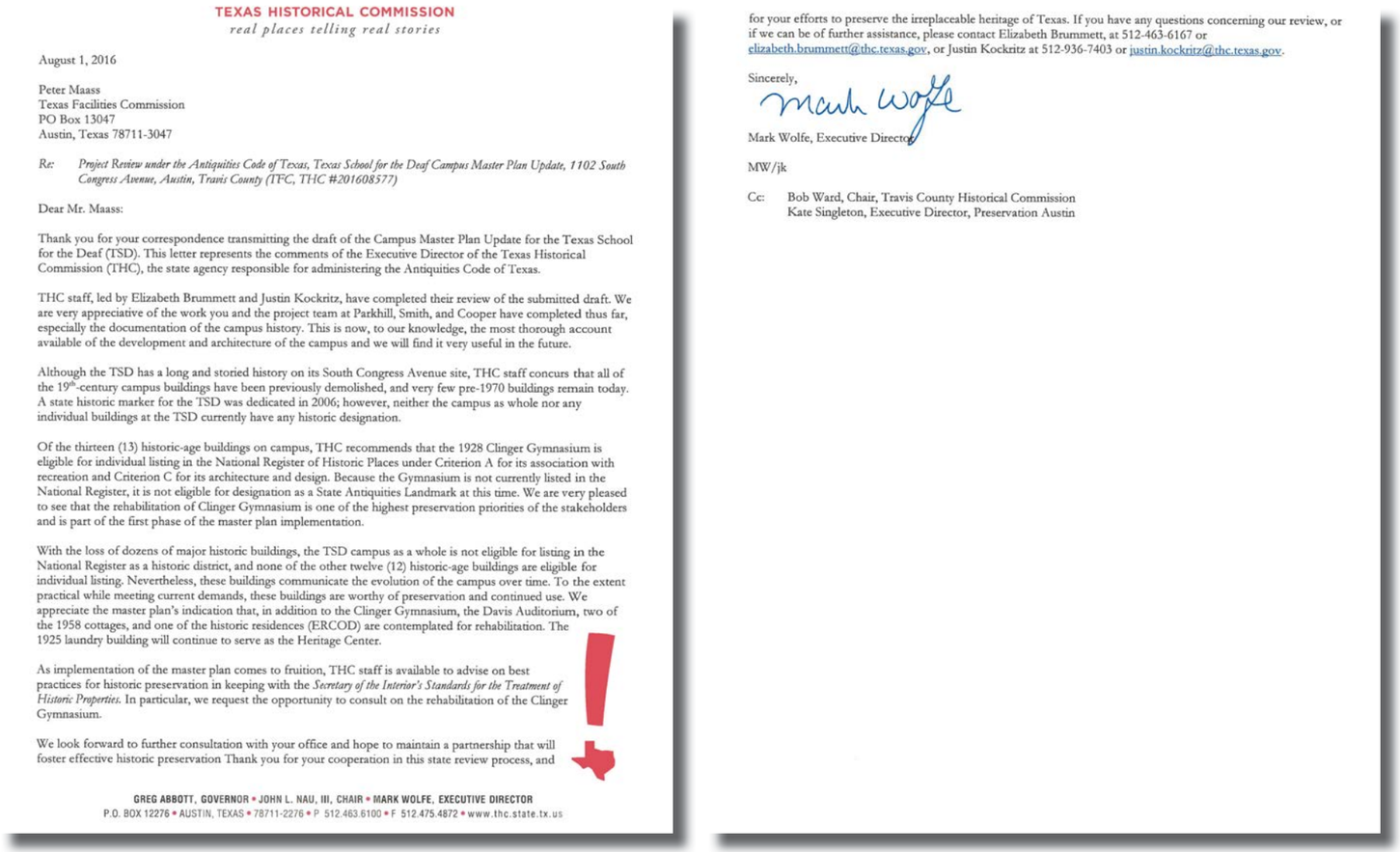
Requirements for any archaeological survey are noted in the bottom right blue-highlighted subsection. In addition to prior background and geologic research, physical site testing will require the execution of “shovel tests” — with the size and scale of most future projects (being up to or less than 3 acres in affected area) requiring three shovel tests per acre. Each shovel test will require point excavation to the depth of Holocene-era soil strata on site, whose layer depth will likely vary from site to site, and thus requires prior geological investigation. Sifted or troweled soil in each excavation requires the analysis and reporting by a professional archaeologist in accordance with THC credential standards. Final survey reports are to be submitted to the THC for review and must be completed prior to the start of any new construction. Should the findings of the survey disclose artifacts or evidence warranting investigation, the project site may be subject to additional shovel testing or trenching to establish the scale of the cultural deposit entailed.

While the process to evaluate the archaeological and long-term cultural heritage of the TSD Campus is a multifaceted and in-depth process, the heritage of the TSD Campus, and the history of the area that preceded the institution is a rich one, and warrants careful evaluation for the preservation of what may be still-unknown facets of Texas’ deep past.

General Requirements for Archaeological Surveys

The following condensed overview of standards have been established by the Texas Historical Commission. Design teams are encouraged to visit the THC website for further information at www.thc.state.tx.us.

- Survey must be supervised by a qualified professional archaeologist in accordance with THC and CTA requirements.
- Archaeologists must first complete a background literature analysis per specific state resources recommended and/or required by the THC.
- The survey and preliminary research must ascertain if deeply buried cultural deposits exist on site requiring deeper subsurface investigation.
- A Texas Archaeological Site Data Form must be completed for any site surveyed and submitted to the Texas Archaeological Research Laboratory (TARL) for record.
- Following completion of shovel tests and soil/deposit analysis, a survey report shall be submitted to the THC for review and comment.
- Any field notes, photographs, and artifacts recovered shall be curated in accordance with CTA requirements.



TEXAS HISTORICAL COMMISSION
real places telling real stories

August 1, 2016

Peter Maass
Texas Facilities Commission
PO Box 13047
Austin, Texas 78711-3047

Re: *Project Review under the Antiquities Code of Texas, Texas School for the Deaf Campus Master Plan Update, 1102 South Congress Avenue, Austin, Travis County (TFC, THC #201608577)*

Dear Mr. Maass:

Thank you for your correspondence transmitting the draft of the Campus Master Plan Update for the Texas School for the Deaf (TSD). This letter represents the comments of the Executive Director of the Texas Historical Commission (THC), the state agency responsible for administering the Antiquities Code of Texas.

THC staff, led by Elizabeth Brummett and Justin Kockritz, have completed their review of the submitted draft. We are very appreciative of the work you and the project team at Parkhill, Smith, and Cooper have completed thus far, especially the documentation of the campus history. This is now, to our knowledge, the most thorough account available of the development and architecture of the campus and we will find it very useful in the future.

Although the TSD has a long and storied history on its South Congress Avenue site, THC staff concurs that all of the 19th-century campus buildings have been previously demolished, and very few pre-1970 buildings remain today. A state historic marker for the TSD was dedicated in 2006; however, neither the campus as whole nor any individual buildings at the TSD currently have any historic designation.

Of the thirteen (13) historic-age buildings on campus, THC recommends that the 1928 Clinger Gymnasium is eligible for individual listing in the National Register of Historic Places under Criterion A for its association with recreation and Criterion C for its architecture and design. Because the Gymnasium is not currently listed in the National Register, it is not eligible for designation as a State Antiquities Landmark at this time. We are very pleased to see that the rehabilitation of Clinger Gymnasium is one of the highest preservation priorities of the stakeholders and is part of the first phase of the master plan implementation.

With the loss of dozens of major historic buildings, the TSD campus as a whole is not eligible for listing in the National Register as a historic district, and none of the other twelve (12) historic-age buildings are eligible for individual listing. Nevertheless, these buildings communicate the evolution of the campus over time. To the extent practical while meeting current demands, these buildings are worthy of preservation and continued use. We appreciate the master plan’s indication that, in addition to the Clinger Gymnasium, the Davis Auditorium, two of the 1958 cottages, and one of the historic residences (ERCOD) are contemplated for rehabilitation. The 1925 laundry building will continue to serve as the Heritage Center.

As implementation of the master plan comes to fruition, THC staff is available to advise on best practices for historic preservation in keeping with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties*. In particular, we request the opportunity to consult on the rehabilitation of the Clinger Gymnasium.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation Thank you for your cooperation in this state review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review, or if we can be of further assistance, please contact Elizabeth Brummett, at 512-463-6167 or elizabeth.brummett@thc.texas.gov, or Justin Kockritz at 512-936-7403 or justin.kockritz@thc.texas.gov.

Sincerely,

Mark Wolfe

Mark Wolfe, Executive Director

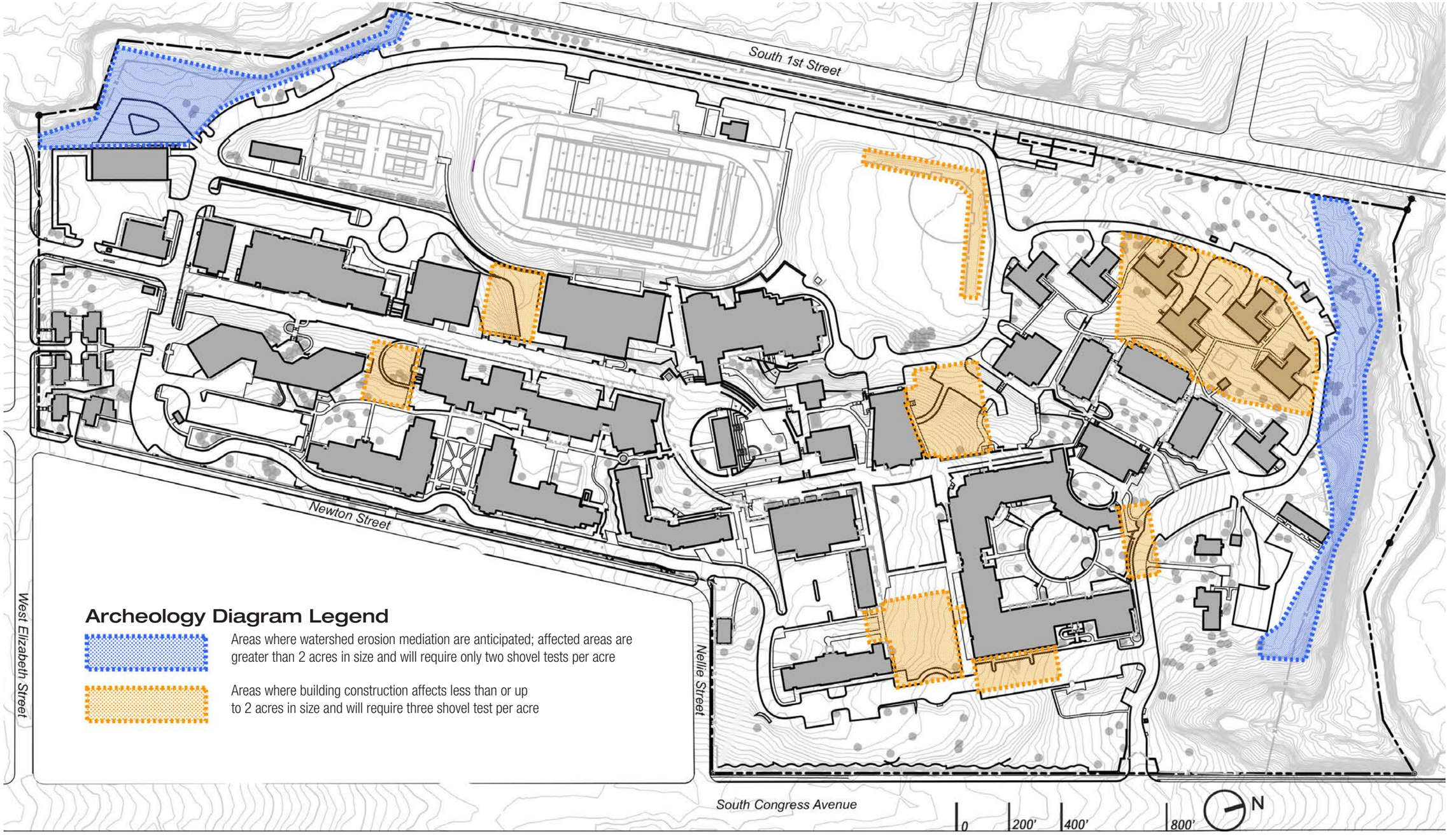
MW/jk

Cc: Bob Ward, Chair, Travis County Historical Commission
Kate Singleton, Executive Director, Preservation Austin

GREG ABBOTT, GOVERNOR • JOHN L. NAU, III, CHAIR • MARK WOLFE, EXECUTIVE DIRECTOR
P.O. BOX 12276 • AUSTIN, TEXAS • 78711-2276 • P 512.463.6100 • F 512.475.4872 • www.thc.state.tx.us

August 1, 2016 project review letter of findings received by the Texas Historical Commission.

Archeology Diagram n.t.s



STAKEHOLDER ENGAGEMENT PLAN

Stakeholder Engagement

Summary of Stakeholder Meeting Priorities

Stakeholder Meeting — Staff, Students, Parents — 1.22.2016

Group 1

1. Parking and wayfinding — right of way
2. Dorms/Apartments/living spaces
3. Revisit space in existing buildings and look at new building needs
4. Re-evaluate pick up/drop off bus areas
5. Universal design/deaf-friendly space/learning environment

Group 2

1. More learning space/utilization of space issues
2. Visual technology; smart boards
3. Housing space/centralize administration
4. More parking
5. Transitional program for age 18 and up graduates; outreach to the graduates in their communities

Group 3

1. Instructional space
2. Flexible/multipurpose student center (kitchen, media, community/social space, theater)
3. Reassess/re-purpose “dead” space/utilizing space for growth
4. Deaf-friendly design space
5. Security

Group 4

1. More classrooms/independent living/office space
2. Safety and security
3. Technology — improve infrastructure
4. Accessibility — lighting, more space, open space, door openers
5. Parking

Group 5

1. Mixed use space
2. Upgrade learning/living environment
3. Parking that accommodates special groups and earns revenue
4. Address arrival — focus— welcome center— identity (mule ears)
5. Redesign must accommodate the continuum of student services

Group 6

1. Space “The final frontier”
2. Efficiency “Think Green”
3. Community collaboration
4. School spirit with interior beautification and exterior (i.e. fence)
5. Visual PA system

Stakeholder Meeting — Staff, Parents, Alumni — 4.19.2016

Group 1

1. Preserve campus history, deaf identity as an icon
2. Centralize administrative services
3. Need curb appeal from South 1st Street
4. Conference center for trainings
5. Collaborate with South Central Waterfront master plan

Group 2

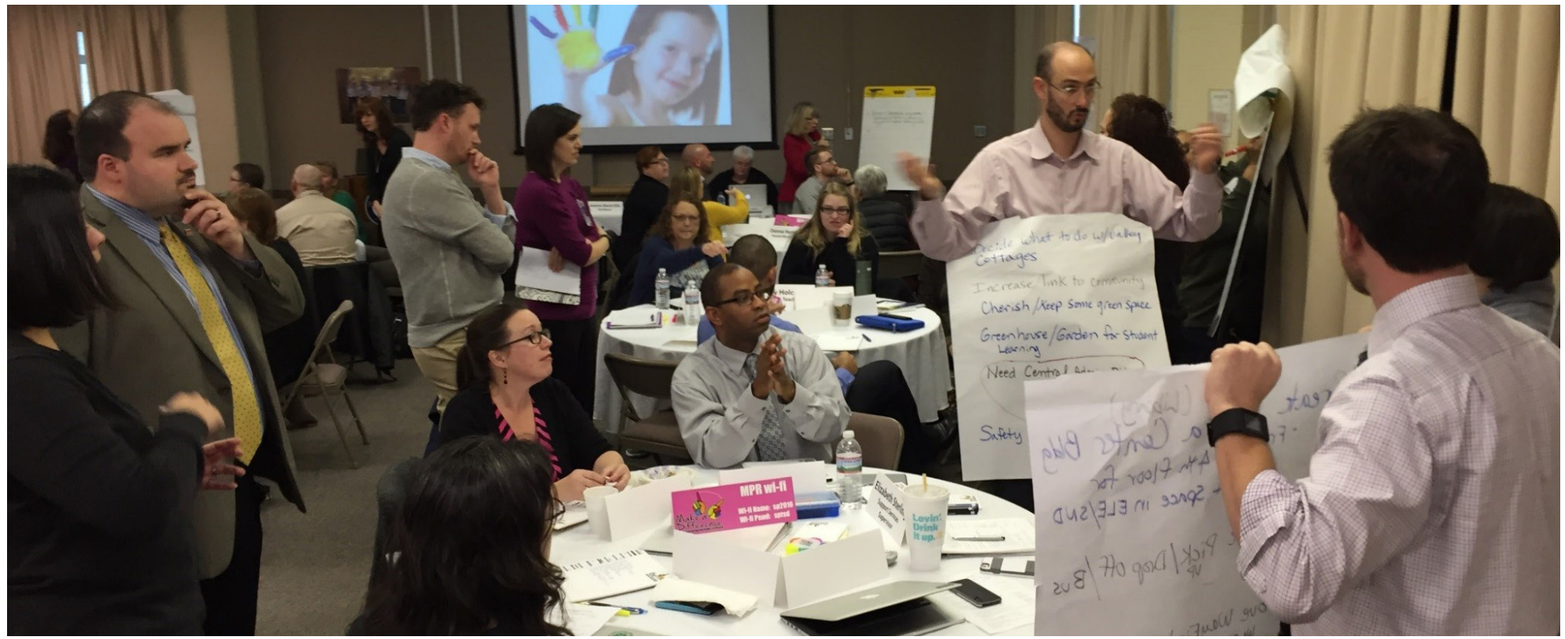
1. Parking garage
2. Centralize administrative services
3. More prominent entrance off South Congress Avenue
4. Artificial turf on athletic fields and eight-lane track
5. Wayfinding

Stakeholder Meeting — Staff, Parents, Alumni, South Congress Merchants — 5.18.2016

1. Parking garage, share with local business area, generate revenue
2. TSD/Local businesses team for potential partnership with Transitional for workers
3. Renovate Kleberg, ERCOD/Parent Infant Program
4. Centralize administrative services
5. Meeting rooms, flexible spaces
6. School buildings to be less institutional, more school spirit
7. Emergency system, outside

Stakeholder Meeting — Staff, Parents, Alumni, Neighbors — 9.21.2016

1. Possible egress point at Newman street
2. Upgrading fencing between neighborhood and school
3. Parking
4. Bus pick up/drop off safety
5. Track, convert six-lane to eight-lane
6. Re-purpose Deaf Smith, support services



Summary of Department Meeting Suggestions

Grounds/Maintenance/Custodial — 2.25.2016

1. More restrooms for female staff at Operations Complex Building No. 2
2. Artificial turf on athletic fields
3. Sidewalks where “cow” paths are located
4. Paths for maintenance vehicle access to all buildings
5. Parking

Student Life — 2.29.2016

1. Parking
2. More gym space
3. More space for the day students that are currently in Cottage 570
4. Meeting spaces and storage
5. Access for students to computer lab and library after school hours

Career and Technology Education — 3.9.2016

1. Meeting space, flexibility
2. More space and updated equipment for culinary program
3. Update rooms to properly support current programs
4. Add a laundry area and locker room area
5. Upgrade technology in classrooms

High School Staff — 3.9.2016

1. Meeting spaces
2. Update lighting
3. Upgrade technology in classrooms
4. Parking
5. Increase size of cafeteria and open up serving lines

High School Students — 5.23.216

1. Parking
2. Dorm kitchens need to be deaf-friendly
3. More classrooms needed
4. More covered walkways on campus
5. Flexible space

Middle School Staff — 3.11.2016

1. Need another gym; add gym divider screens
2. Meeting spaces
3. Parking
4. Safety and security
5. Upgrade science labs and equipment

Middle School Students — 5.23.2016

1. Middle school dorm, more space
2. Flexible, classrooms
3. More space needed for day student
4. Wayfinding
5. Parking

Elementary School Staff — 3.9.2016

1. More play and playground area
2. Add multipurpose room, library needs to be more of a multipurpose room
3. Privacy rooms for video phones
4. Covered walkways to other parts of campus
5. Outdoor learning areas

Elementary School Students — 5.23.2016

1. Campus safety
    a. More sidewalks, stable ground to walk on
    b. More control of entrance gates
    c. Emergency system, outside
2. Classroom
    a. Need more space in classroom
    b. More technology, ipads
    c. Calming rooms
3. Wayfinding
4. Deaf-friendly spaces, no columns

Support Services — 3.9.2016

1. Calming rooms/observation rooms or areas
2. No temporary buildings
3. Safer area for bus loading
4. Playgrounds for special need students
5. Wayfinding

Athletics — 3.9.2016

1. Artificial turf on athletic fields
2. More gym space and storage
3. Pool depth needs to be increased
4. Need a field house
5. Renovate bowling alley

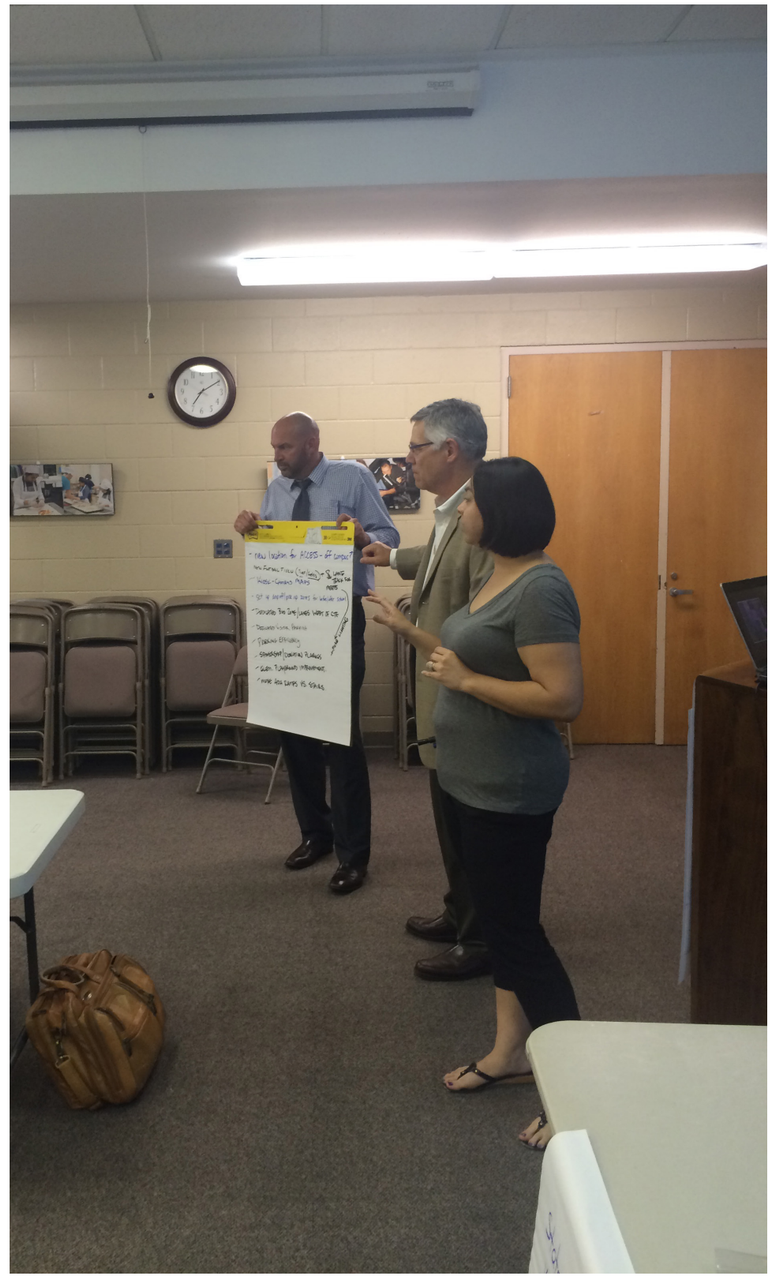
Transitional — 3.10.2016

1. Need residential teaching kitchen
2. Calming rooms
3. Location — educational, living, transportation
4. Meeting rooms — flexible
5. Computer lab

Business/Operations — 3.10.2016

1. More meeting spaces
2. Covered area for bus loading
3. Centralize administrative services
4. Safe place for kids to ride bikes
5. Less institutional, more traditional home life for students

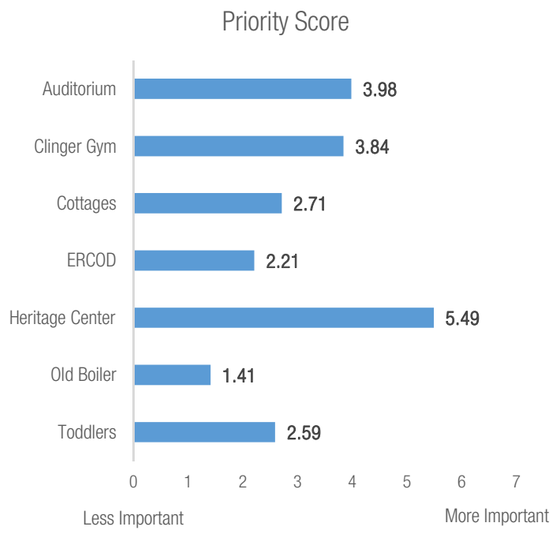
Stakeholder Meetings



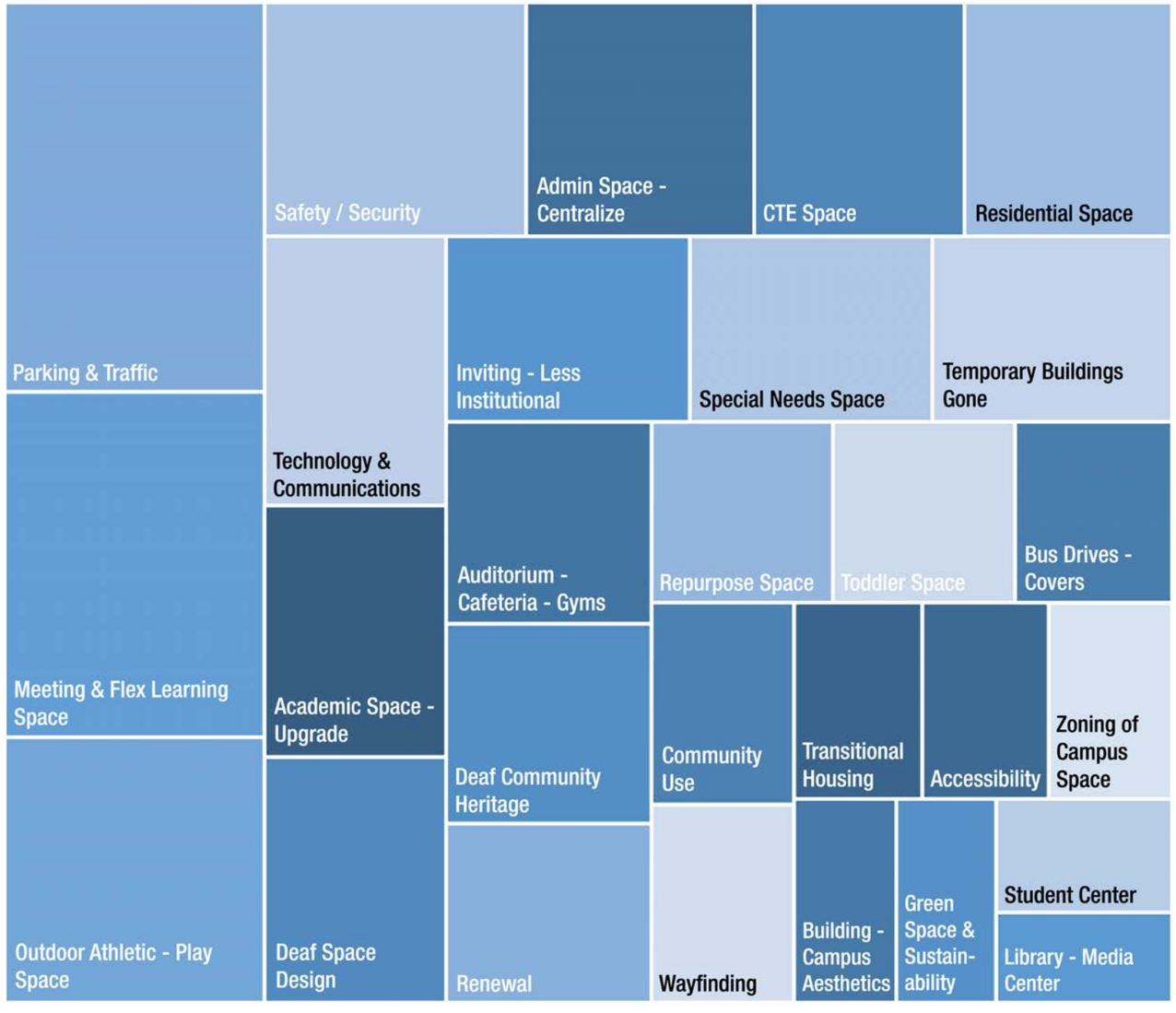
Meeting Summaries

Preservation
The chart below summarizes stakeholder prioritization of preservation of buildings older than 50 years. A web-based survey was used to procure feedback from TSD stakeholders. The higher the score the more stakeholders indicated it was important to preserve the building. The stakeholders were asked to rank these buildings in order of importance. This chart summarizes the rankings.

Based on 314 responses.



Stakeholder Concern and Improvements Needed
The tree chart below summarizes the number of times stakeholder groups mentioned the noted concerns/improvements. This chart is through November 2016.



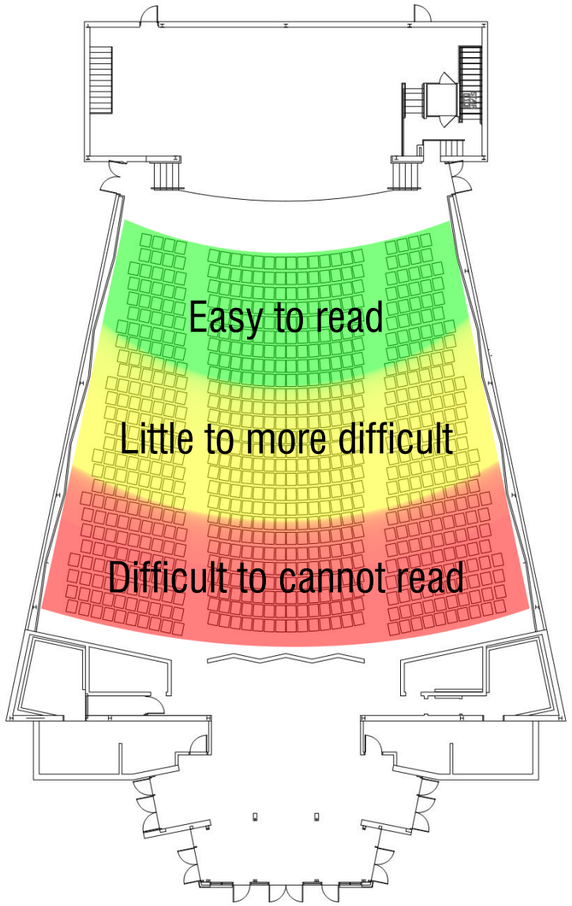
EQUITY ANALYSIS

Deaf Space Design Analysis

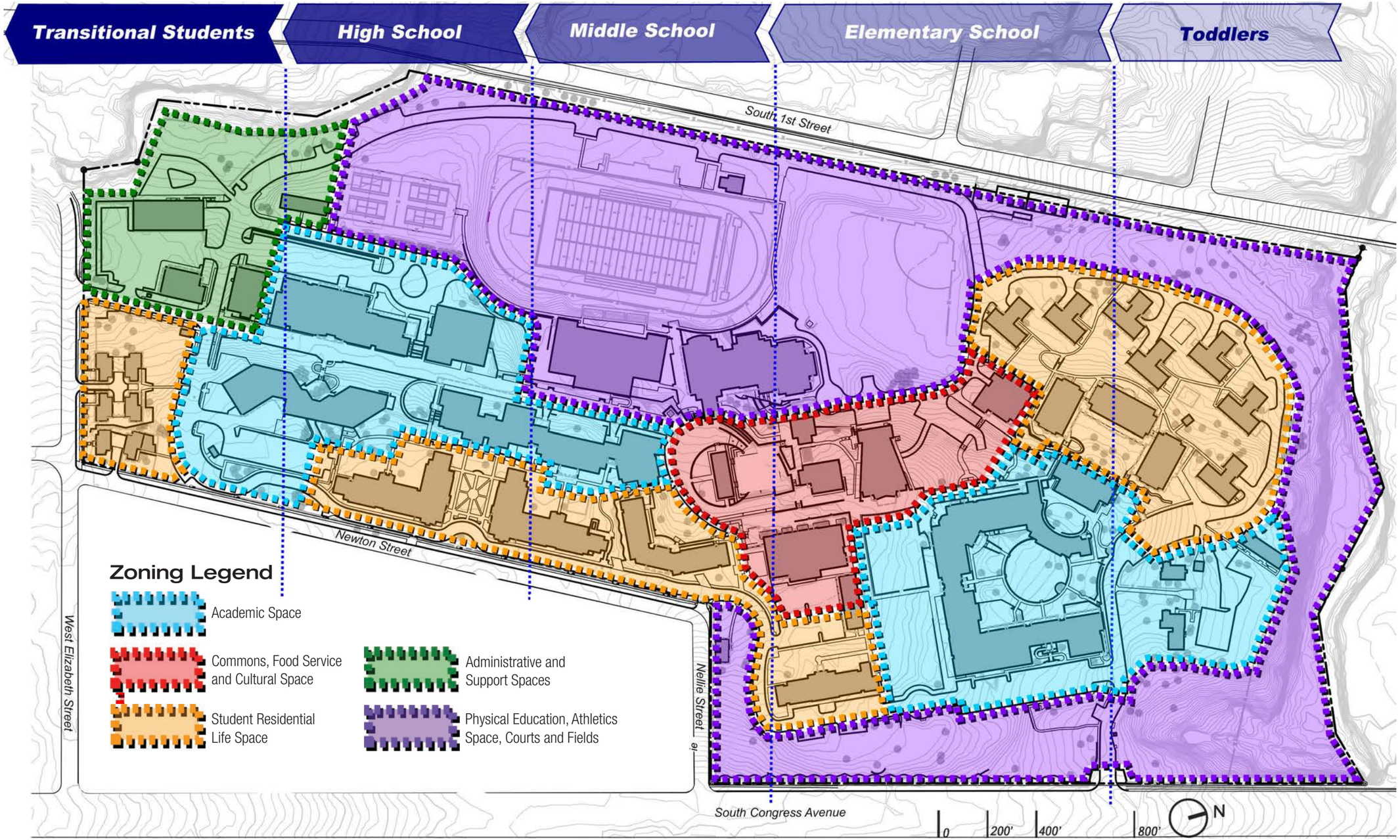
The 2016 facility condition assessment identified deaf space design deficiencies. Additional deficiencies have been identified in the master planning process, many from stakeholder meetings. Below is a summary of some of the current deaf space design deficiencies identified to date.

- **General Line of Sight and Transparency** — Line of sight to see and communicate with other occupants and connect to activities outside space is limited in many locations. Examples include between classrooms and corridors, around sharp corridor turns, from entryways, between offices, etc.
- **Ramps not Stairs** — It is preferable to navigate level change by ramp instead of stairs so that occupants can communicate via sign language. Examples are stairs to the secondary school building and stairs from the natatorium level to the plaza level.
- **Flexible Seating Arrangements** — For the most part seating is flexible, but some areas, such as the high school lecture hall, are not.
- **Workspace Islands vs. Perimeter Wall Stations** — Some fixed stations are located on the wall so the occupant has their back to the room. Examples are the welding lab and some stations in the building trades lab. The high school student kitchens are another example. It is preferable for work and learning stations to be located around free standing areas and/or islands so users can visually communicate and observe surrounding activities.
- **High Contrast** — Wall colors are not high contrast to ease of reading sign language. A good example is the multi-purpose room in the Ford Building with tan walls. The tan walls make it difficult to distinguish hand signing.
- **Classroom Acoustics** — Are deficient in that background noises are above 40 decibels and reverberation may exceed recommendations. Some rooms had more than 50 decibels in background noise. More study is needed to quantify reverberation.
- **Classroom Lighting** — Is below recommended foot candle levels and in most cases is direct, rather than diffused as recommended. Some rooms had lighting levels in the 30-40 foot candle range vs. the recommended 55 foot candles.
- **Narrow Corridors and Walks** — many corridors and walks are narrow that may inhibit side-by-side signing.
- **U-shaped Room Arrangement** — Many rooms allowed U-shaped furniture arrangement, which allows occupants to see each other. A few examples of spaces that do not are the science labs, high school lecture hall and the auditorium.
- **Auditorium Sight Lines** — The back third of the auditorium seating is difficult to impossible to read sign language from the stage according to occupant data.

Sight Line Study of Existing Auditorium
Shows how well occupants can read sign language from stage.



Campus Zoning Plan n.t.s.



Analysis

Existing Facilities

2015 Facility Condition Assessment

In 2015, a facility condition assessment (FCA) was performed on existing facilities to identify improvements needed to renew aging facility systems, bring facilities up to current standards and to accommodate the TSD strategic plan. This section summarizes existing facilities and the findings of the FCA.

Summary of Existing Facilities

The following summarizes key information about existing facilities and the general findings of the FCA. Construction estimates are in 2016 dollars.

Facility Relative Condition

A facility condition index (FCI) is provided for each building. This is the ratio of renovation cost to the cost of a replacement building. The higher the percentage, the more improvements are needed for the building. Replacement and renovation cost estimates include construction cost, construction manager cost and architect/ engineer fees.

Building Replacement

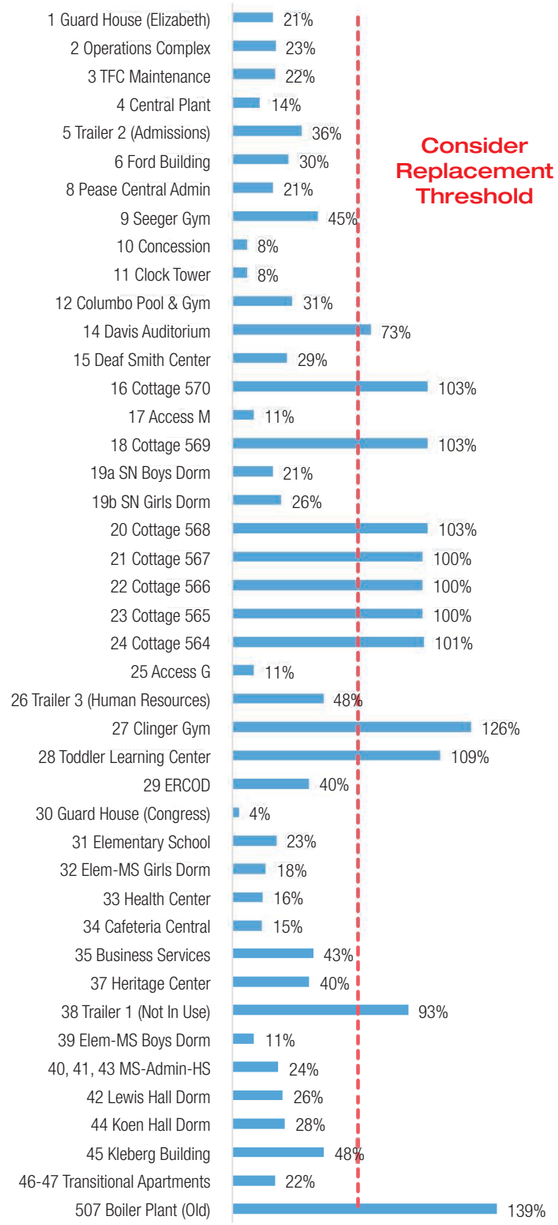
Many planners consider replacement of a building when the FCI exceeds 66 percent. For the purposes of the master plan, a more detailed economic evaluation was performed for buildings recommended for replacement. See these evaluations in later sections.

Historic and Iconic Building Renewal

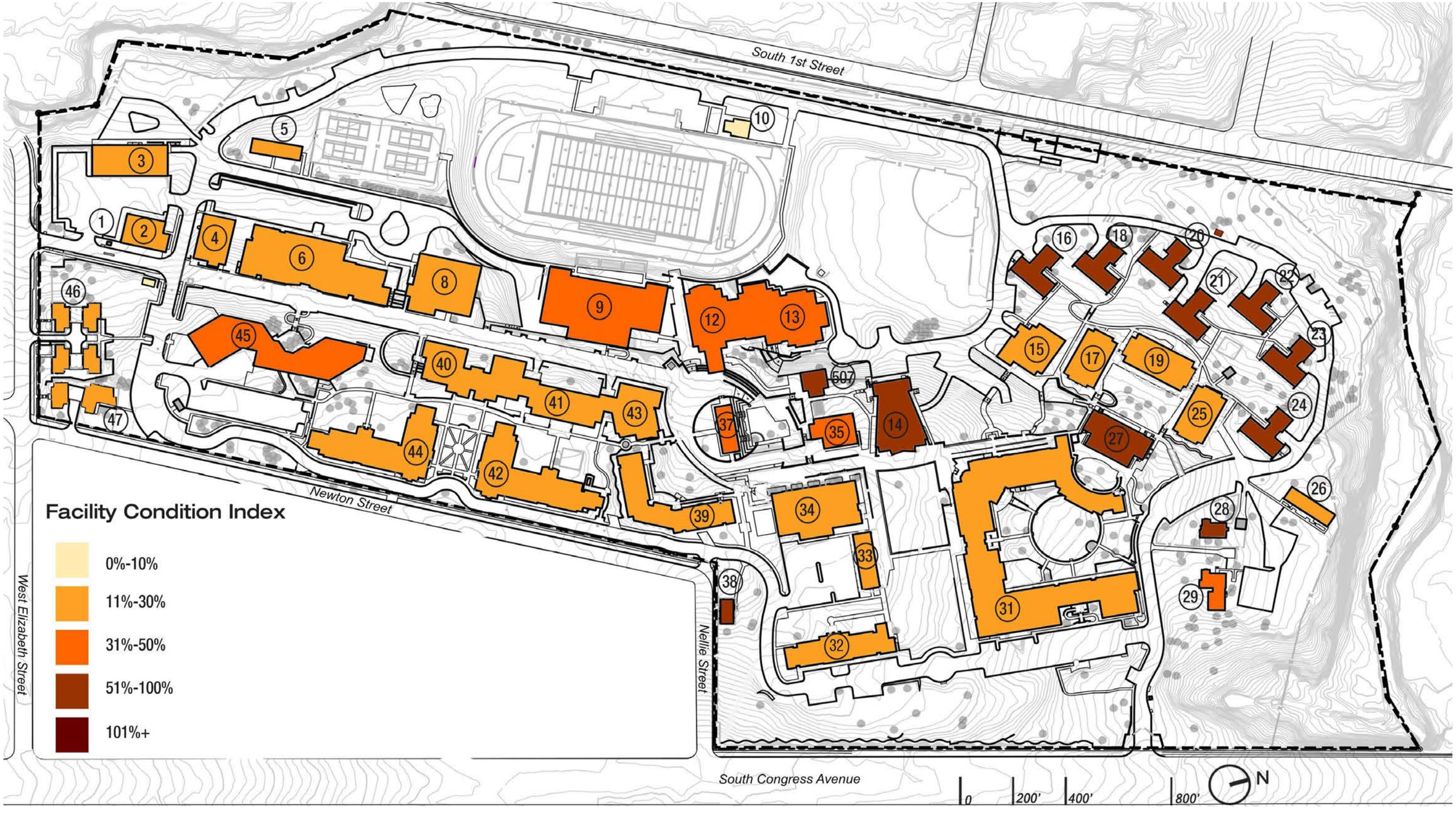
Buildings with historic or community significance are often renovated with FCIs in excess of 66 percent. The Clinger Gym is recommended for renewal, even though the FCI exceeds 66 percent, due to the architectural and deaf community historical significance and a recommendation from the Texas Historical Commission.

Bldg.	Map No.	Facility Name	Use	Year Built - Acquired	Age	Gross Sq. Ft.	Replace $/SF	Replacement Value	Repair/Renovation Cost	FCI %
1		Guard House (Elizabeth)	Security	1997	18	48	$ 417	$ 20,016	$ 4,284	21%
2		Operations Complex	Office	1992	23	5,315	$ 435	$ 2,312,025	$ 528,874	23%
3		TFC Maintenance	Maint Shop	1993	22	8,647	$ 313	$ 2,706,511	$ 606,138	22%
4		Central Plant	Power Plant	1997	18	6,756	$ 1,404	$ 9,485,424	$ 1,372,367	14%
5		Trailer 2 (Admissions)	Office	1991	24	2,688	$ 180	$ 483,840	$ 175,425	36%
6		Ford Building	Classroom	1995	20	37,002	$ 404	$ 14,948,808	$ 4,423,936	30%
8		Pease Central Admin	Office	1978	37	15,278	$ 404	$ 6,172,312	$ 1,319,356	21%
9		Seeger Gym	Gymnasium	1975	40	25,741	$ 404	$ 10,399,364	$ 4,659,015	45%
10		Concession	Service Center	2001	14	1,427	$ 404	$ 576,508	$ 44,545	8%
11		Clock tower	Clock tower	1997	18			$ 300,000	$ 22,995	8%
12		Columbo Pool & Gym	Pool & Gym	1997	18	36,404	$ 566	$ 20,604,664	$ 6,484,172	31%
14		Davis Auditorium	Auditorium	1958	57	12,347	$ 497	$ 6,136,459	$ 4,474,208	73%
15		Deaf Smith Center	Recreation	1980	35	7,046	$ 404	$ 2,846,584	$ 819,750	29%
16		Cottage 570	Day Students	1958	57	4,625	$ 487	$ 2,252,375	$ 2,314,078	103%
17		Access M	Dormitory	2004	11	6,713	$ 487	$ 3,269,231	$ 365,403	11%
18		Cottage 569	Vacant	1958	57	4,625	$ 487	$ 2,252,375	$ 2,315,244	103%
19a		SN Boys Dorm	Housing	2001	14	4,200	$ 487	$ 2,045,400	$ 432,312	21%
19b		SN Girls Dorm	Housing	2001	14	4,200	$ 487	$ 2,045,400	$ 525,811	26%
20		Cottage 568	Offices	1958	57	4,625	$ 487	$ 2,252,375	$ 2,315,244	103%
21		Cottage 567	Boys Housing	1958	57	4,625	$ 487	$ 2,252,375	$ 2,254,764	100%
22		Cottage 566	Vacant	1958	57	4,625	$ 487	$ 2,252,375	$ 2,256,181	100%
23		Cottage 565	Girls Housing	1958	57	4,625	$ 487	$ 2,252,375	$ 2,256,213	100%
24		Cottage 564	Storage	1958	57	4,625	$ 487	$ 2,252,375	$ 2,272,215	101%
25		Access G	Housing	2004	11	6,713	$ 487	$ 3,269,231	$ 365,403	11%
26		Trailer 3 (Human Resources)	Office	1991	24	2,688	$ 180	$ 483,840	$ 231,832	48%
27		Clinger Gym	Gymnasium	1928	87	14,045	$ 404	$ 5,674,180	$ 7,138,374	126%
28		Toddler Learning Center	Classroom	1949	66	1,424	$ 404	$ 575,296	$ 628,617	109%
29		ERCOD	Residence	1949	66	2,059	$ 487	$ 1,002,733	$ 403,364	40%
30		Guard House (Congress)	Security	2002	13	64	$ 417	$ 26,688	$ 945	4%
31		Elementary School	Classroom	2001	14	51,470	$ 417	$ 21,462,990	$ 4,976,010	23%
32		Elem-MS Girls Dorm	Housing	2004	11	8,643	$ 487	$ 4,209,141	$ 739,644	18%
33		Health Center	Health Center	2004	11	3,759	$ 435	$ 1,635,165	$ 258,842	16%
34		Cafeteria Central	Cafeteria	2001	14	15,310	$ 475	$ 7,272,250	$ 1,121,510	15%
35		Business Services	Office	1971	44	6,797	$ 435	$ 2,956,695	$ 1,261,315	43%
37		Heritage Center	Museum	1925	90	4,448	$ 435	$ 1,934,880	$ 781,759	40%
38		Trailer 1 (not in use)	Vacant	1991	24	1,344	$ 180	$ 241,920	$ 224,287	93%
39		Elem-MS Boys Dorm	Housing	2004	11	10,939	$ 487	$ 5,327,293	$ 608,097	11%
40, 41, 43		MS-Admin-HS	Classroom	1997	18	89,058	$ 417	$ 37,137,186	$ 8,969,867	24%
42		Lewis Hall Dorm	Housing	1997	18	38,078	$ 487	$ 18,543,986	$ 4,910,010	26%
44		Koen Hall Dorm	Housing	1997	18	38,078	$ 487	$ 18,543,986	$ 5,129,905	28%
45		Kleberg Building	Classroom	1983	32	19,616	$ 404	$ 7,924,864	$ 3,825,656	48%
46-47		Transitional Apartments	Housing	1993	22	10,535	$ 487	$ 5,130,545	$ 1,151,548	22%
507		Boiler Plant (old)	Vacant	1949	66	1,954	$ 435	$ 849,990	$ 1,184,061	139%
		Transformer building				96		$ 101,606		
		General site work							$ 9,175,154	
		Total TSD				**533,305**		**$ 244,322,030**	**$ 95,328,725**	**35%**

Facility Condition Index (FCI)



Facility Condition Index Map n.t.s.



Maintainability

A critical component to the long-term stewardship of the TSD Campus is to instill a uniform and quality level of maintainability to buildings, site work, and appurtenances. Lessons in the past three decades of campus growth can be taken and applied at TSD. The following overview focuses on tactical and strategic recommendations as to the future courses of buildings at TSD. In some cases, such as landscaping and irrigation, maintainability recommendations have also been disbursed to other sections of the master plan, as well as technical recommendations included in the technical design guidelines appendix.

Exterior Building Envelope

In a continuation of exterior building systems proposed with the previous master plan and subsequent campus development of the 1990s and 2000s, the Master Plan recommends to both the Owner and end user for the continued use of cavity wall construction with full brick and integral-color concrete masonry unit (CMU) masonry exterior veneer on future TSD Buildings. This system provides the most effective balance of cleanability, durability of 50 years of service life of 50 years or greater, and economy of cost over other masonry systems used in state-owned buildings such as granite or limestone. So much of the prior campus built in the last two-plus decades consist of masonry cavity wall construction with a load-bearing CMU substrate. The Master Plan proposes the introduction of other substrate systems such as insulated concrete form (ICF) walls that may prove a faster, more economical, and more easily waterproofed (at engaged excavated substrates) system in future construction, while also providing excellent continuous-insulation (CI) and air and moisture barrier performance. In the case of the three existing temporary buildings that exist on the campus, the need for building systems and envelopes that are durable and impermeable becomes clear. Multiple temporary buildings suffer from varmint infestation, an issue that will be addressed upon their demolition.

Stormwater Considerations

There are multiple facets to the need to control and route stormwater on campus, as well as the critical task of preventing stormwater infiltration into the interior built environment. The design approach taken by prior firms in the roof and stormwater design of buildings built in the 1990s and 2000s is commendable. Due to the proliferation of many large-caliper heritage trees (including oaks, pecans, and other species) on a campus where the majority of buildings are two stories or less in height and thus lower than the surrounding trees, a general design strategy of higher-slope roofs and minimized low-slope applications will aid in long-term maintenance. With that, the master plan recommends that pitched roofs — much like the copper standing-seam roofs with exposed gutters and downspouts — continue to be the predominant horizontal planar system to future buildings and their envelopes at TSD. Low-slope roofs, if needed, should be easily-accessible. The concern is that tree and leaf debris, if unchecked, could block internal roof drain inlets (whether basketed or not), and stain or damage single-membrane low-slope roof surfaces.

Further, future campus development and requirements established by the State Energy Conservation Office (SECO) under the State Comptroller Office mandate the incorporation of stormwater capture and cistern technology for capturing the first inch of a rain event. There are two predominant active technology-assisted approaches to stormwater capture — the "first flush" approach and the static non-submersible approach. The former approach uses an initial buildup of graywater to essentially "flush" stormwater plumbing of debris buildup prior to storage, while the latter provides above- and below-grade intakes for stormwater to route to a storage medium that is pumped by an exposed pump unit connected externally to the tank or cistern for reuse. Although any pump-supported cistern system will require maintenance, the exposed-pump design has proven to have greater reliability and servicing access over a submersible pump. In either case, the water can be reused for irrigation purposes on campus. The Master Plan recommends the latter system whenever roof systems are not anticipated to receive significant leaf or landscape debris buildup, and the former "first-flush" system in areas of the campus where significant leaf and debris buildup is unavoidable.

Interior Finishes and Environment

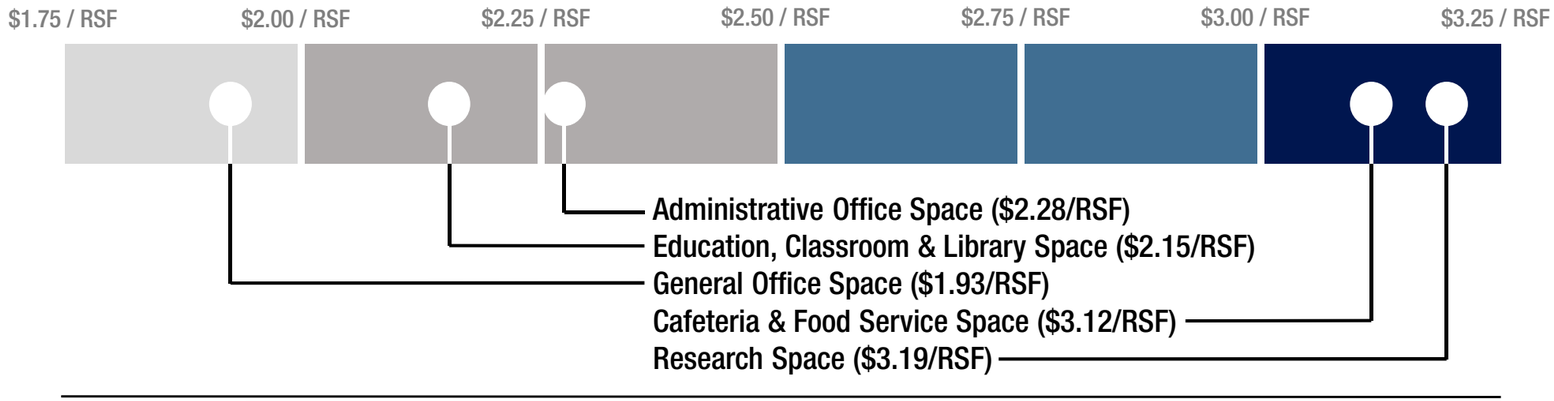
Buildings constructed at TSD over the last two-plus decades have often consisted of spartan, heavily impact-resistant surfaces and planes such as painted concrete block and resilient flooring. While highly maintainable and serviceable, separate considerations in providing a higher-quality and less institutional interior environment for students and faculty alike is indeed a priority. At the same time, maintenance and durability remain a converse concern and reality. Where painted and textured gypsum board is being recommended in public and commons spaces, student residential space, and academic learning spaces, the Master Plan recommends use of impact-resistant, water-resistant gypsum board on vertical surfaces as an alternative to painted CMU. The integral woven or plastic mesh used in these board systems provides improved resistance to minor and moderate impact events.

Further, a combined interior lighting strategy that focuses on the use of LED fixtures for all lighting, minimizes or eliminates lighting mounted within hard furrings (e.g. 'can lights'), and/or uses exposed suspended pendants and even automated motorized winched pendants in high volume spaces is recommended. This strategy will go far in reducing lighting maintenance needs and the time, cost, and mobilization efforts of lighting repairs as well as replacements in high-volume spaces.

As indicated in the bar graph below, specific building types which have more intensive use and custodial requirements in turn required a higher degree of maintainability. Those buildings highlighted in the campus maintainability diagram located on the opposite page indicate those existing facilities which have a higher cost per square foot to maintain.

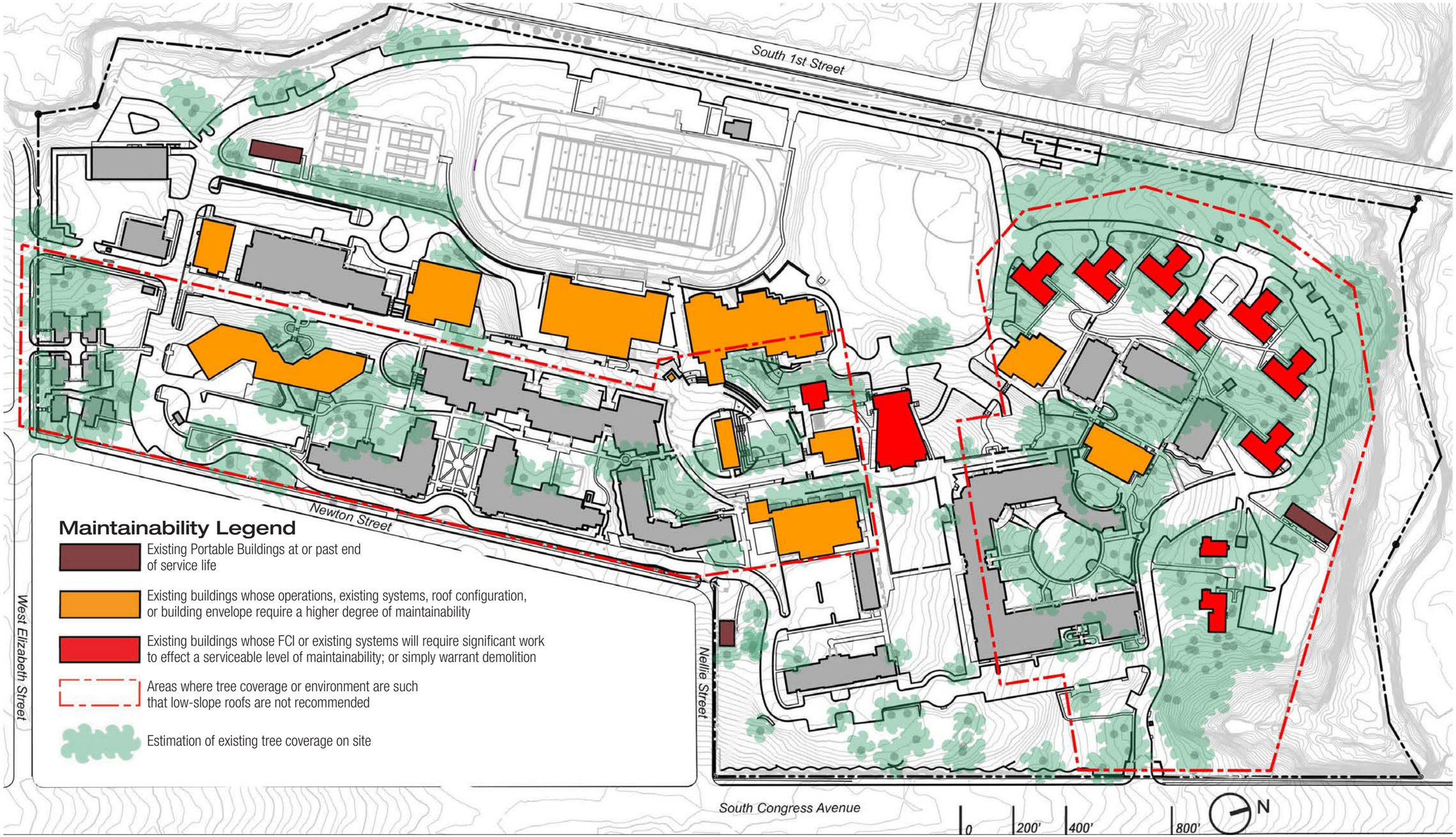
Comparison of Operations & Maintenance Costs by Spatial Type

Total maintenance cost as calculated per rentable square foot (RSF) per year



Data from International Facility Management Association (IFMA) Operations and Maintenance Benchmarks, Research Report #32, 2009. "Rentable Square Footage" is an industry term that is not to be construed as TSD Property being rented or leased in any fashion.

Maintainability n.t.s



Sustainability

Implementation of the proposed master plan strategy for the Texas School for the Deaf requires an integral focus towards improving the overall ecological, building system, stormwater, and energy use sustainability to the TSD Campus. Many of these imperatives are in fact baseline requirements, given the recently-adopted ASHRAE requirements for state-owned buildings established by SECO. A range of general issues have been identified within and throughout the TSD Campus which must be addressed in the course of proposed deferred maintenance improvements, existing facility renovations, and new construction. These strategies include the following:

- **Building Envelope Improvements** — Particularly for those buildings in the campus over 30 years of age, renovations must focus on implementing a continuous insulating (CI) strategy for existing facilities, and replacing outdated single-pane fenestrations with insulated glazing units.
- **Stormwater Control** — Recently-analyzed erosion in the Bouldin Creek watershed bounding the northern end of the campus can be largely attributed to significant impermeable surface area across the northern half of the campus, with little area between buildings and roadways to the creek basin to retain stormwater for ground recharge.
- **Energy Performance** — Adaptive reuse, renovation, and continued addressing of deferred maintenance matters will allow the opportunity for the replacement of less-efficient fluorescent- and HID-based lighting systems, installation of more sophisticated lighting controls and sensors, and replacement of components of the central heating and cooling system.
- **Abating Heat Island Effect** — Much of the public and common circulation space on campus suffers from a general lack of shade, and expensive existing covered walkways are few and far between. Key areas of the campus require significant numbers of added shade trees or architectural treatment to reduce high albedo and in the process, increase the amount of outdoor space that can be used for student or activity use.

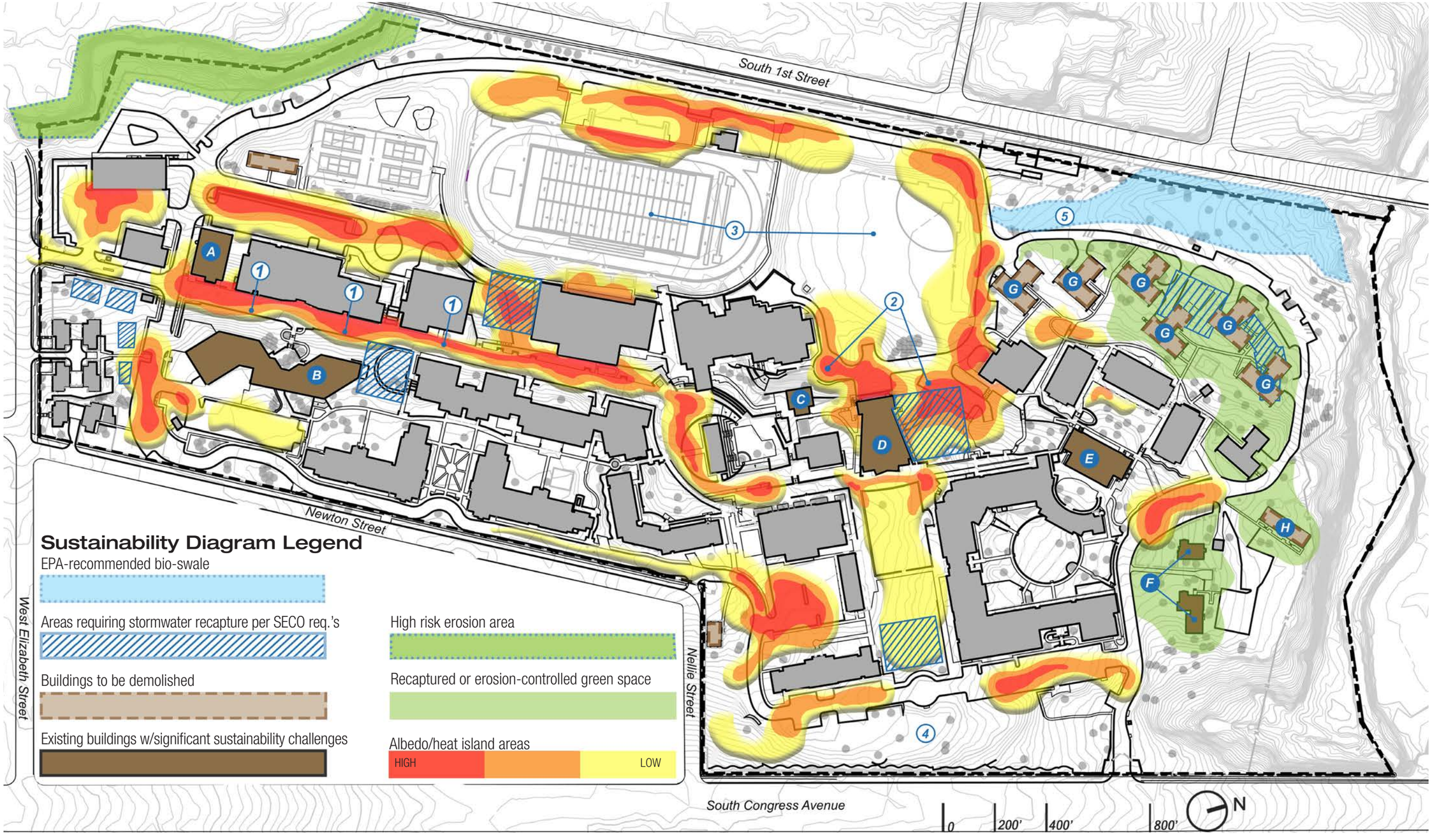
The following buildings noted in brown in the adjacent diagram require significant improvements or demolition to address sustainability issues:

A. **Central Plant** — Deferred maintenance and system replacement will, over time, improve energy performance for the entire campus
B. **Kleberg Building** — HVAC improvements, lighting replacement, and improvements to improve R/U-value performance to the building envelope are needed
C. **Old Boiler Building** — The building warrants demolition, as it has no effective HVAC system at present and the antique brick-and-structural clay tile perimeter wall construction would make it difficult to achieve an effective CI envelope.
D. **Auditorium** — Gustafson's modernist auditorium, though large, faces similar HVAC, general energy use, and building envelope performance issues as many of the older buildings on campus.
E. **Clinger Gymnasium** — Unlike the Auditorium, the Clinger Gym, though it will require significant building envelope improvement, would include modernization of the gym's lighting technology and mechanical system to include high-efficiency HVAC distribution.
F. **ERCOD and Toddler House** — Similar MPE and building envelope improvements are necessary to make the buildings more sustainable.
G. **Cottages** — Much like the Auditorium, the Cottages are old and do not warrant the of cost for building envelope and MPE renovations necessary for the buildings to be more sustainable. All cottages are therefore to be demolished, allowing for the development of permeable recharge land south of the Bouldin Creek watershed.
H. **Temporary Trailers** — The once temporary trailers have been in a 'permanent' role for too long, and need to be removed. Wood framed, low-R/U-value building envelopes and inefficient DX-type air conditioning systems do not make the facilities sustainable elements to the campus.

Likewise, the following site and campus issues have been identified as sustainable solutions that are being incorporated into the master plan, as numbered in the attached plan. Note that these issues respond to matters such as heat island blooms (noted in color from yellow to red on plan), and blue hatching, denoting surface area that will require service by stormwater cistern collection as required by SECO for state buildings in locations receiving 20 inches or more per year of rainfall. These responses include the following

1. **South Pedestrian Mall Heat Bloom** — Shade tree or architectural treatment is recommended to abate the high heat buildup observed in the high-traffic pedestrian zone between Ford and Kleberg Buildings.
2. **Auditorium Heat Island** — The proposed multipurpose facility and theater affords the opportunity to address erosion, stormwater, and heat island issues, and install permeable or higher-reflectivity paving systems north and west of the new facility. Increased shade tree solutions are recommended as well.
3. **Athletics Stormwater Control** — During the course of performing the work proposed in the master plan for the football/baseball/softball, design solutions are needed to retain more stormwater on the site, reduce heat island effect, and prevent heavy stormwater runoff to the north.
4. **Permeable Paving** — Additional paving for parking needed in the northern half of the TSD Campus should be permeable systems, or linked to subgrade storage or geotextile media to reduce runoff risk to the Bouldin Creek watershed.
5. **Preservation of Commons Space and Heritage Trees** — Any new parking constructed in high-visibility areas of the Campus shall require careful detail to mitigate potential heat island effect, maximize on-site retention of stormwater, and protect existing heritage tree plantings.

Campus Sustainability Diagram n.t.s.



Topography and Drainage

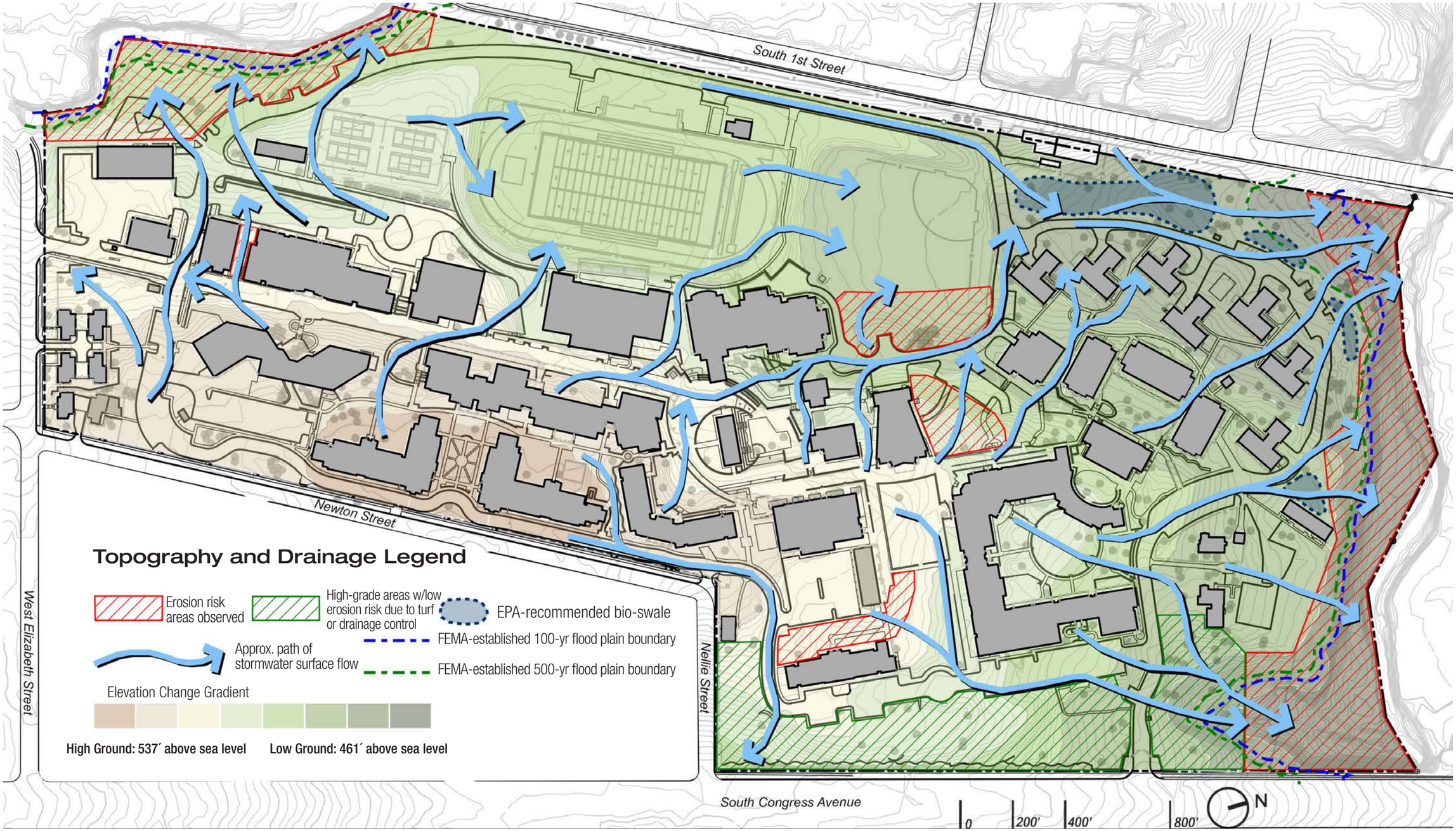
The topographical composition to the Texas School for the Deaf Campus presents multiple challenges in the continued development and maintenance of the institution. Perhaps most obvious of these is that some 76 feet of rise/fall exists across the campus spanning from a crown east of Koen Hall to a low point situated within the Bouldin Creek ravine along the north campus perimeter. A comprehensive range of design solutions — including both subgrade storm water sewerages and surface drainage solutions — have been incorporated over the course of the modernist and postmodern development of the campus into the early 2000s. Concurrently to this however, the campus development of the 1990s and 2000s also resulted in a significant increase to the impermeable surface area of the campus, with little designed in the form retention, catchment, or recharge of storm water which may accumulate on campus in a precipitation event. Based upon calculations, existing campus buildings alone would generate approximately 248,000 gallons of storm water discharge onto the campus in a 1-inch rain event, while the core of the campus has a near 1:1 ratio between permeable and impermeable surfaces to receive this water. While sumps, interceptors, and drains collect much of this runoff, a large percentage drains to the west, but predominantly to the southwest and to the north into the Bouldin Creek watershed which bounds the site from two sides.

Above: A view looking west down Bouldin Creek as it runs south of the site. It appears heavy flow from upstream rain events has eroded the embankment beyond the traditional cross section of the creek. The erosion is currently undercutting the chain link perimeter fence.

This discharge into Bouldin Creek has proven to be a systemic problem across much of the Bouldin Creek Watershed — both within and beyond the boundaries of the TSD Campus — and is presently being analyzed by both the City of Austin and the EPA. Within TSD grounds, the greatest problem lies to the southwest, where a laydown yard situated west of the Maintenance Complex has provided a discharge conduit for stormwater free of the usual gamut of thicket growth and tree roots that would traditionally prevent erosion of the embankment. Regardless of any active or passive stormwater control solutions incorporated in the campus, immediate stabilization through naturalization of native vegetation, gabions, and rock and grade control weirs will be required along this stretch of the creek. Similar conditions of lesser severity were observed along the north perimeter of the campus, though root footings and plant growth in that area of campus has limited erosion to a lesser degree. It is recommended TSD coordinate future efforts with existing resources of the City of Austin Watershed Protection Department.

On the campus itself, three predominant elements in this proposed master plan will greatly improve the impacts of long-term stormwater drainage. First, SECO requirements for state-owned buildings as prescribed by Texas Government Code Chapter 447.004 mandate that nearly half of the 125,148 gross square feet in new construction require rainwater harvesting systems to capture the first inch of rainfall upon that structure. Installation of capture systems in future buildings will reduce campus stormwater load by 13,400 gallons per event. Secondly, the proposed master plan includes demolition of 42,192 gross square feet of space, with 55 percent of that reduction of roof area coming with the demolition of the existing residential cottages on the northwest end of the campus. Removal of the cottages will allow for much increased recharge and retention of stormwater in that campus quadrant, rather than becoming runoff into Bouldin Creek. Finally, additional surface parking proposed throughout campus will include the incorporation of geotextile systems, permeable pavers, and/or interceptors to capture stormwater not for release into storm sewers, but for ground recharge. Thus, future expansion and densification of the TSD Campus will not involve a parallel increase in storm water runoff that could exacerbate on- and off-campus erosion and watershed quality issues.

Topography Gradation and Drainage Plan n.t.s.

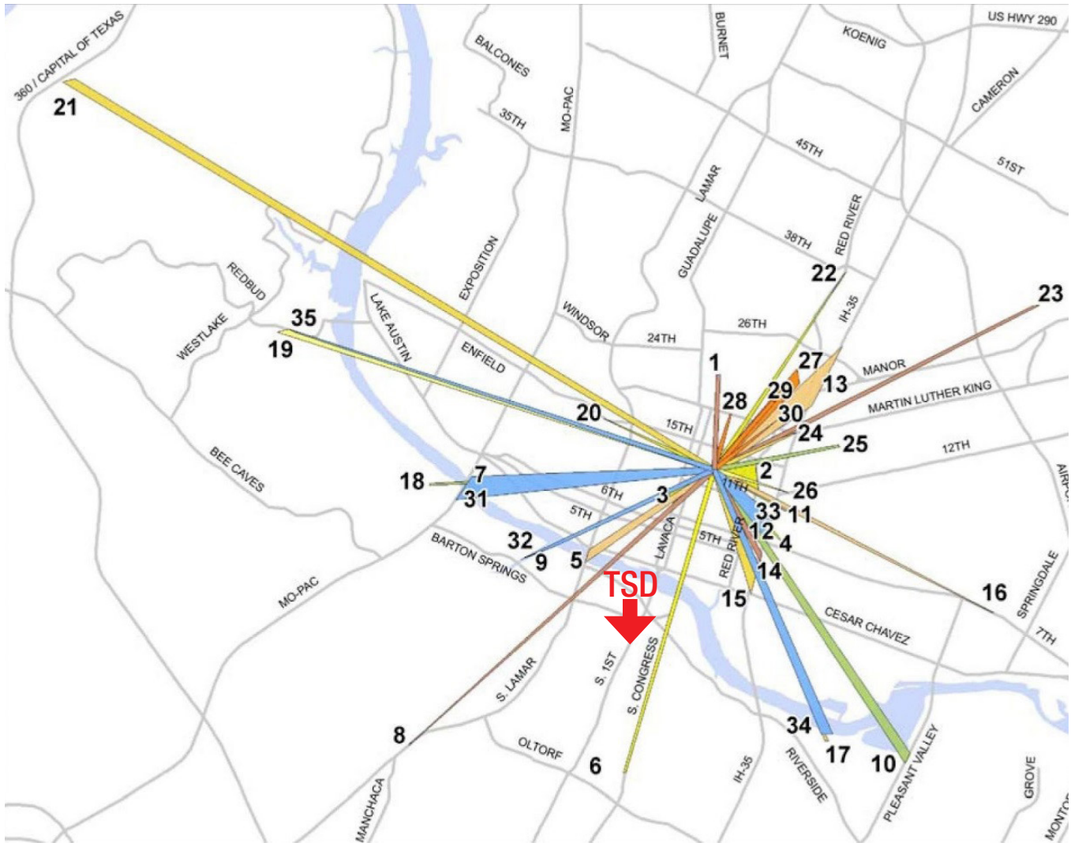


Capitol View Corridor Study

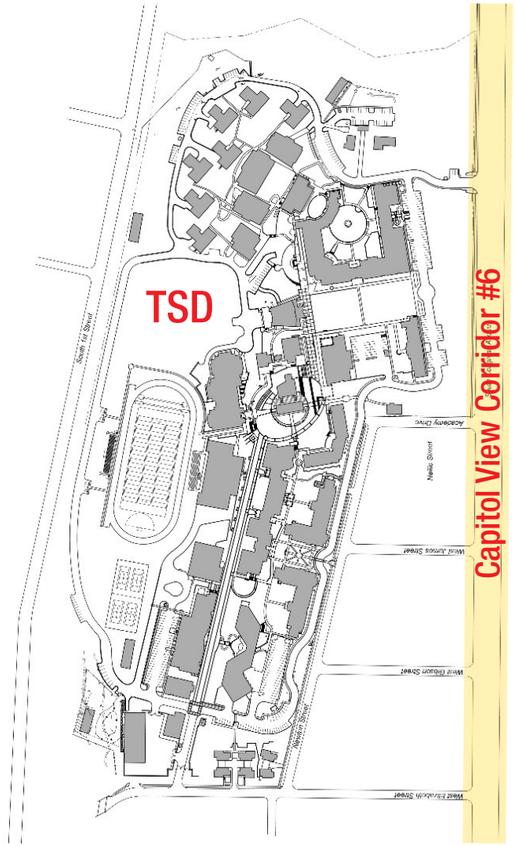
Background
In 1983 the legal protections for the Capitol View Corridors (CVC) were established by then State Senator Lloyd Doggett and State Representative Gerald Hill (Senate Bill 176) during the 68th Legislative Session. These projections can be found as Chapter 3151 of the Texas Government Code.

The City of Austin has also established Capitol View Corridors, some of which differ from the State CVC's. However, the South Congress Avenue CVC adjacent to the TSD campus is the same on both the State and City plans.

The images below show the CVC locations. CVC number six is on South Congress Avenue adjacent to TSD campus.



Capital View Corridors



Capital View Corridor #6

Photo by Flynn Construction.

Aerial image from ArchMap n.t.s.

Traffic and Parking Analysis

Traffic

The TSD campus is served by one north-south arterial road, South Congress Avenue, and one east-west feeder road, Elizabeth Street. TSD encourages most traffic to use the Elizabeth Street entrance in lieu of the South Congress Avenue entrance. It appears South Congress Avenue traffic is mainly visitors and parents.

Counts were taken on a Tuesday and Friday, as these days are historically the heaviest traffic days. These charts are for Tuesday, which was the higher count of the two days. Detailed traffic data and analysis is found in the Appendix.

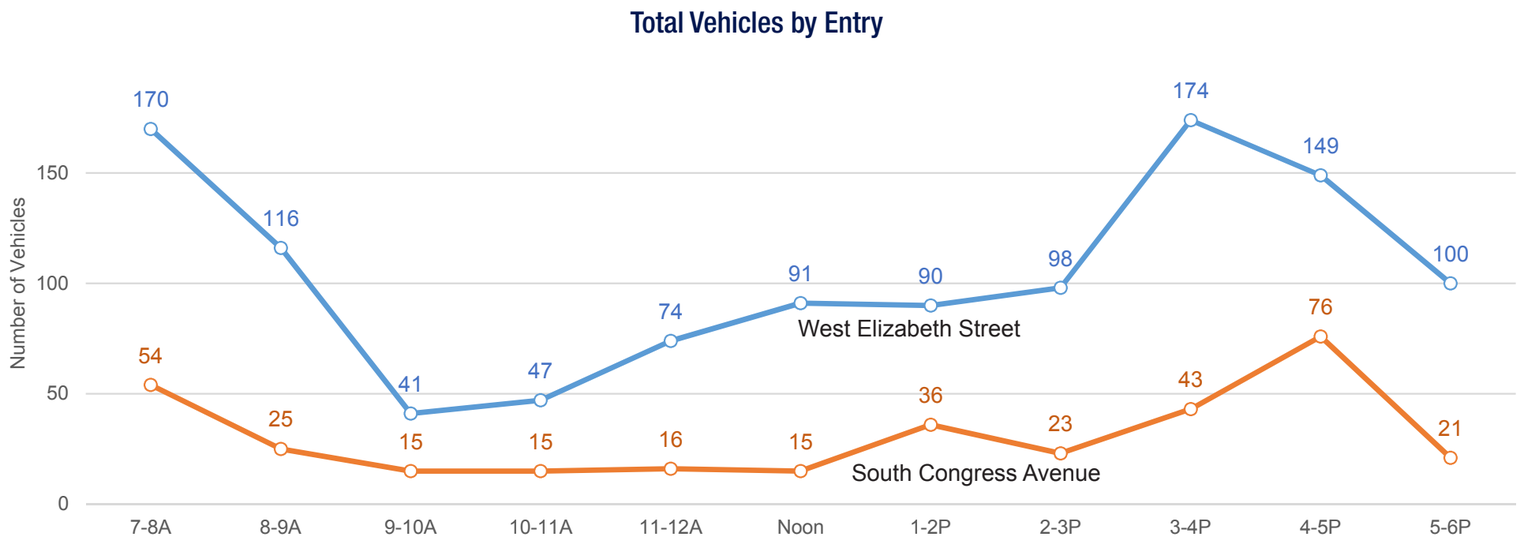
Parking

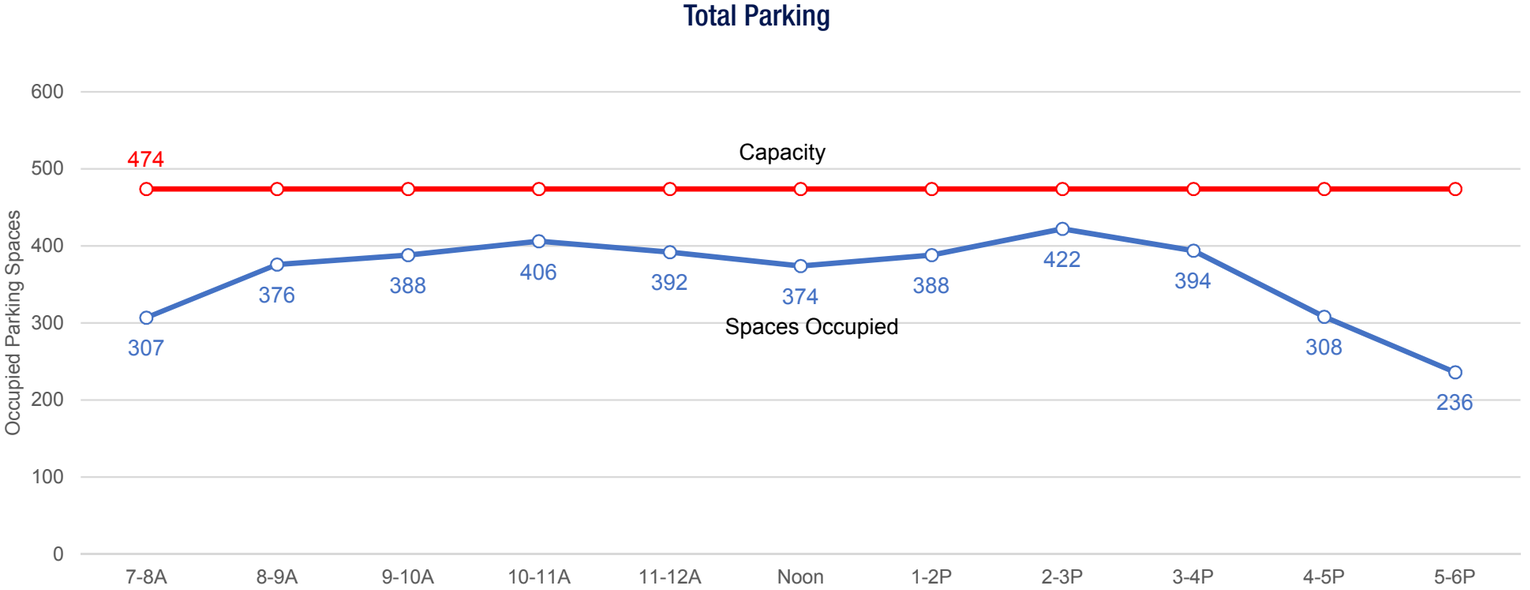
This survey is for paved surface parking. Campus-wide parking nears capacity just before and after lunch. Overflow parking is sometimes placed in the outfield of the baseball/softball practice field. Parking spaces are spread across the campus, but do not appear to be concentrated in the highest demand areas. The highest parking utilization rates were at the southwest and northeast portions of the campus.

Counts were taken on a Tuesday and Friday, as these are historically the highest parking demand days. These charts are for Tuesday, which was the higher occupancy of the two days. Detailed parking data and analysis is found in the Appendix.

It may be appropriate to add parking spaces at the southwest and northeast portions of the campus for current building use. If building use is shifted, parking should be shifted accordingly. The forecasted 10-year enrollment growth is 23 percent. A corresponding increase in parking capacity would be 110 parking spaces.

110 additional parking spaces
needed if consistent with forecasted enrollment growth.

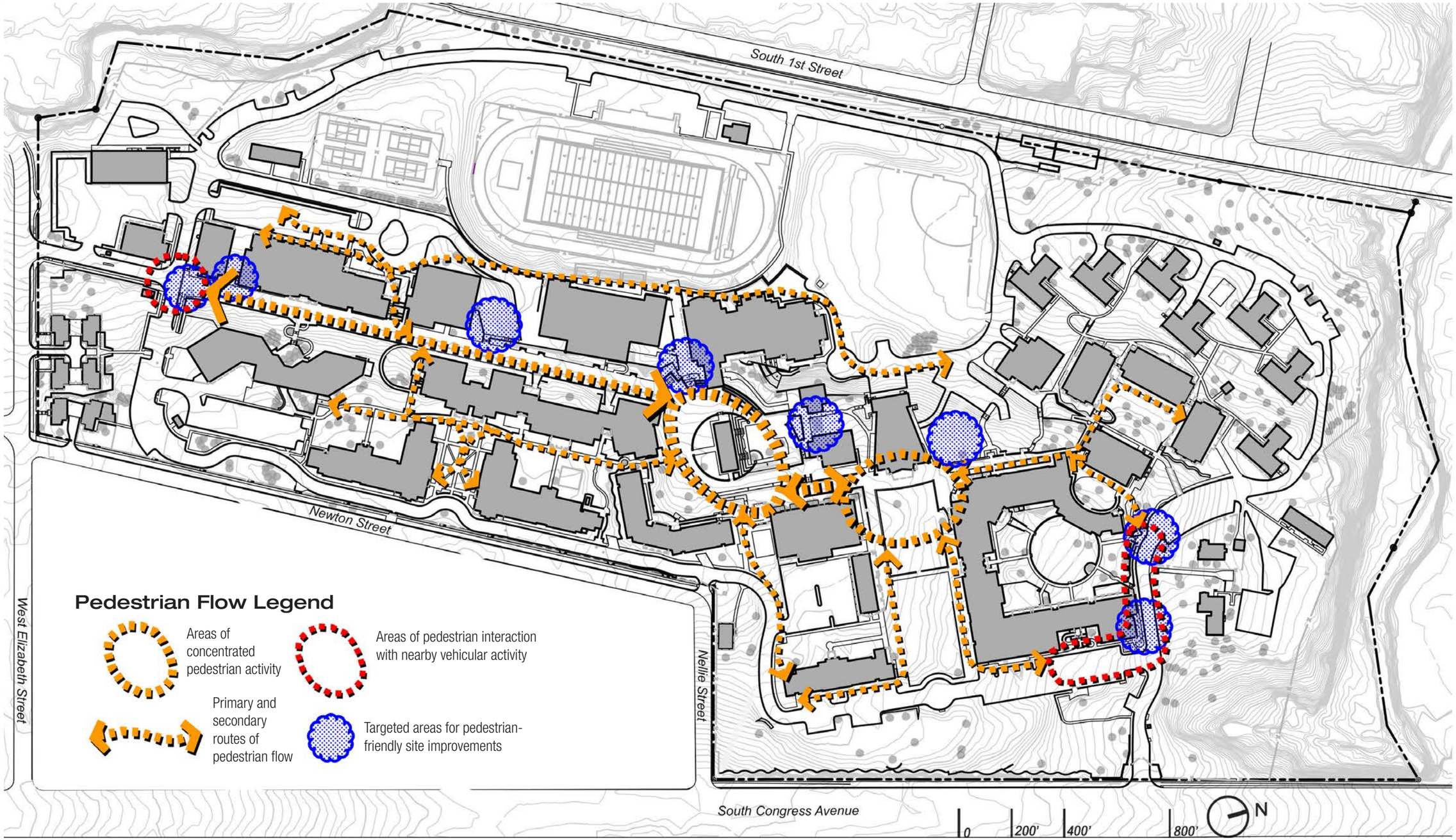




Existing Traffic Diagram, n.t.s.

Proposed Traffic Diagram, n.t.s.

Campus Pedestrian Flow Diagram, n.t.s.



Landscaping Study

Open/Green Space Inventory

Over half of the 62-acre TSD campus is open/green space 55 percent and covered in some form of vegetation or pervious groundcover. Roughly 18 acres 29 percent is paved with an impervious material such as concrete, asphalt or other hardscape material. The remaining 10 acres 16 percent of coverage consists of buildings and other structures.

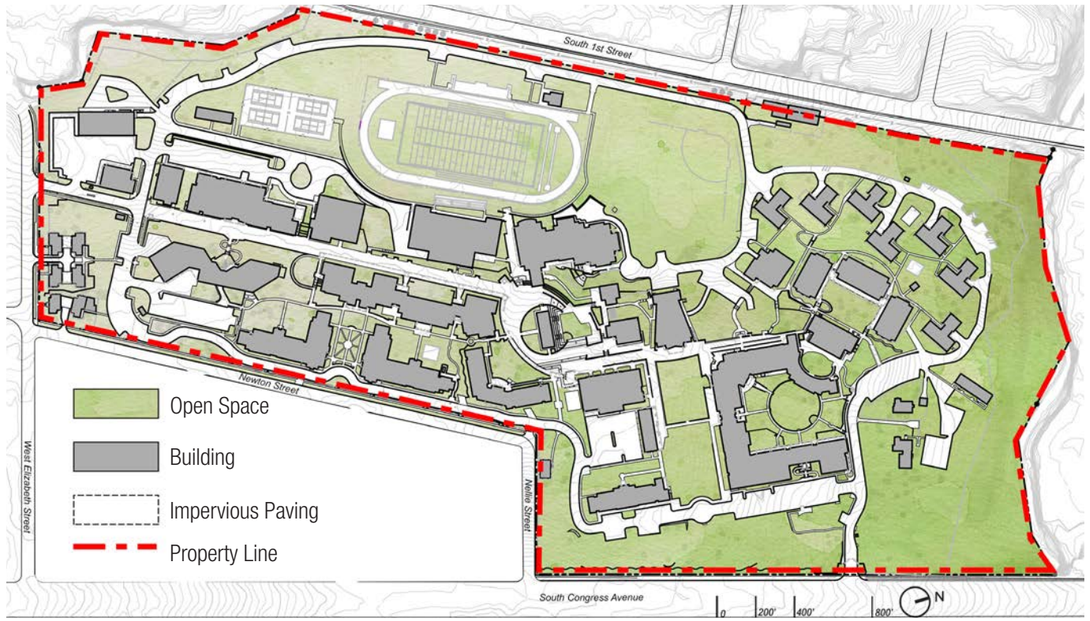
Heritage Tree Inventory

A Heritage Tree is defined as a tree that has a diameter of 24 inches or more, measured 4.5 feet above natural grade. Only specific tree species are considered to be in the Heritage Tree category. These include the Texas Ash, Bald Cypress, American Elm, Cedar Elm, Texas Madrone, Bigtooth Maple, Pecan, Walnut, and all Oak Trees.

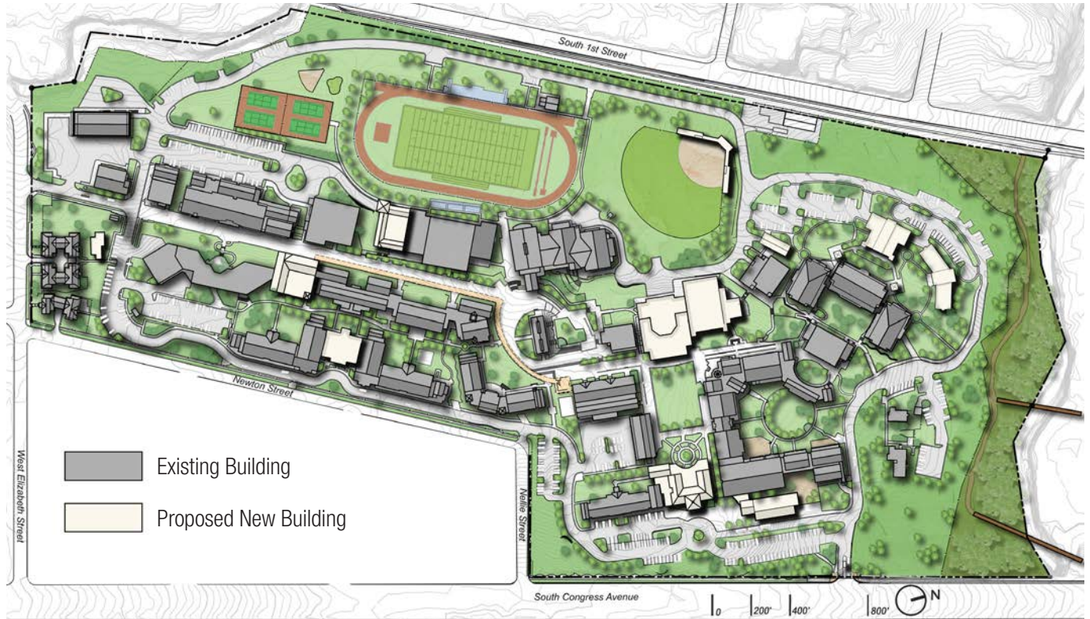
Of the approximately 450 trees on the TSD campus, roughly 200 have a trunk that measures 24 inches or more in diameter. A thorough tree survey is necessary to determine the species of these trees to determine the exact number of Heritage Trees on the TSD Campus. A field inspection of the trees was performed on the TSD Campus approximately 150 trees were identified as potential Heritage Trees.

The location of Heritage Trees must be a consideration when planning future campus development and expansion.

Reference the diagram to the following page that shows the location of potential Heritage Trees on the TSD Campus.

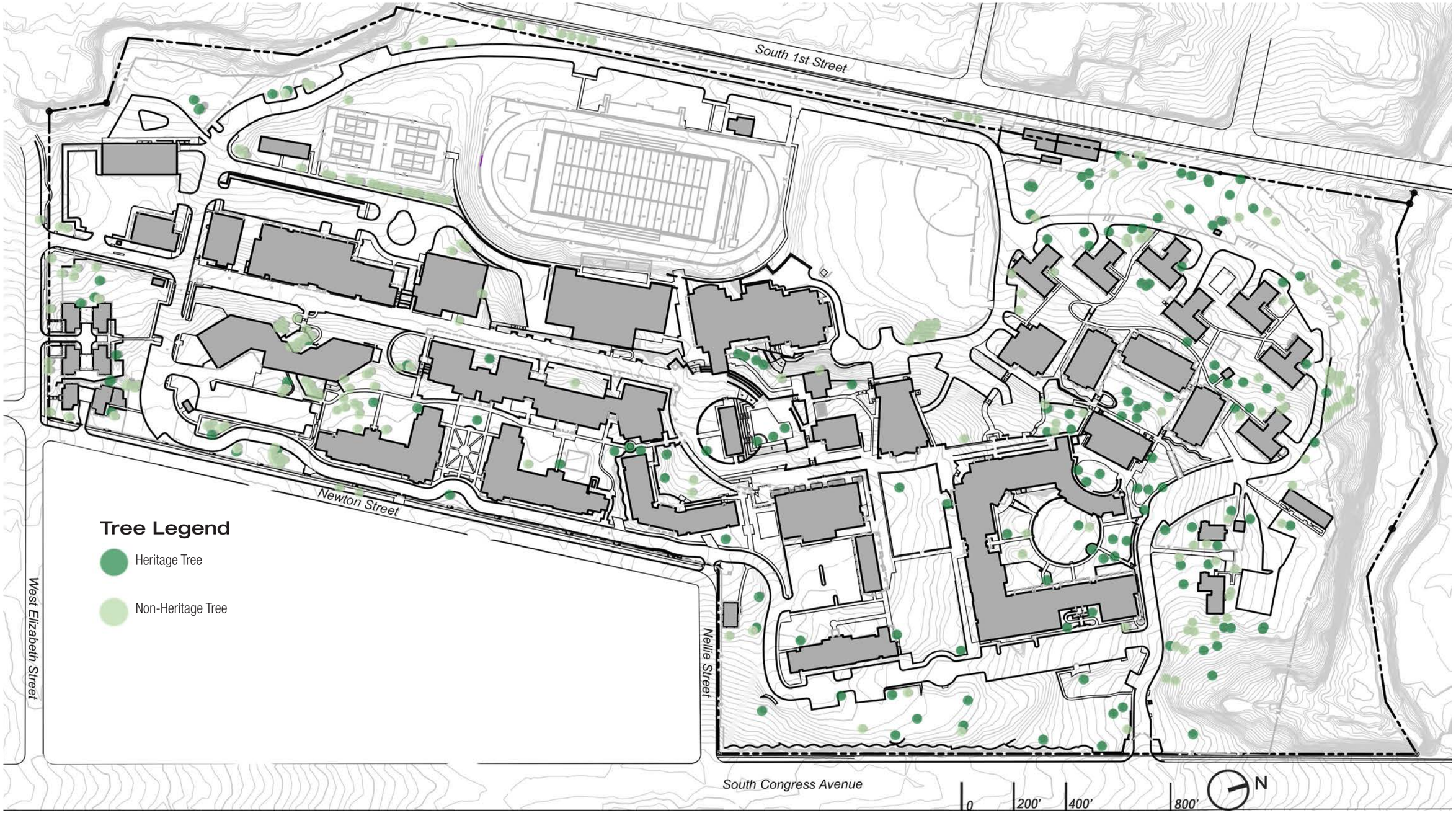


Existing Conditions Open Space Diagram, n.t.s.



Final Plan Open Space Diagram, n.t.s.

Heritage Tree Diagram, n.t.s.



Neighborhood Land Use Study

Neighborhood Planning Area

The TSD campus is in the Bouldin Creek Neighborhood Planning Area as designated by the City of Austin Planning and Zoning Department. Immediately adjacent to the campus and across South Congress Avenue to the east is the Greater South River City Neighborhood Planning Area. Neighborhood plans are produced by neighborhood residents and adopted by the City Council. The neighborhood plans provide a framework and vision for future neighborhood development, including a future land use map.

Future Land Use

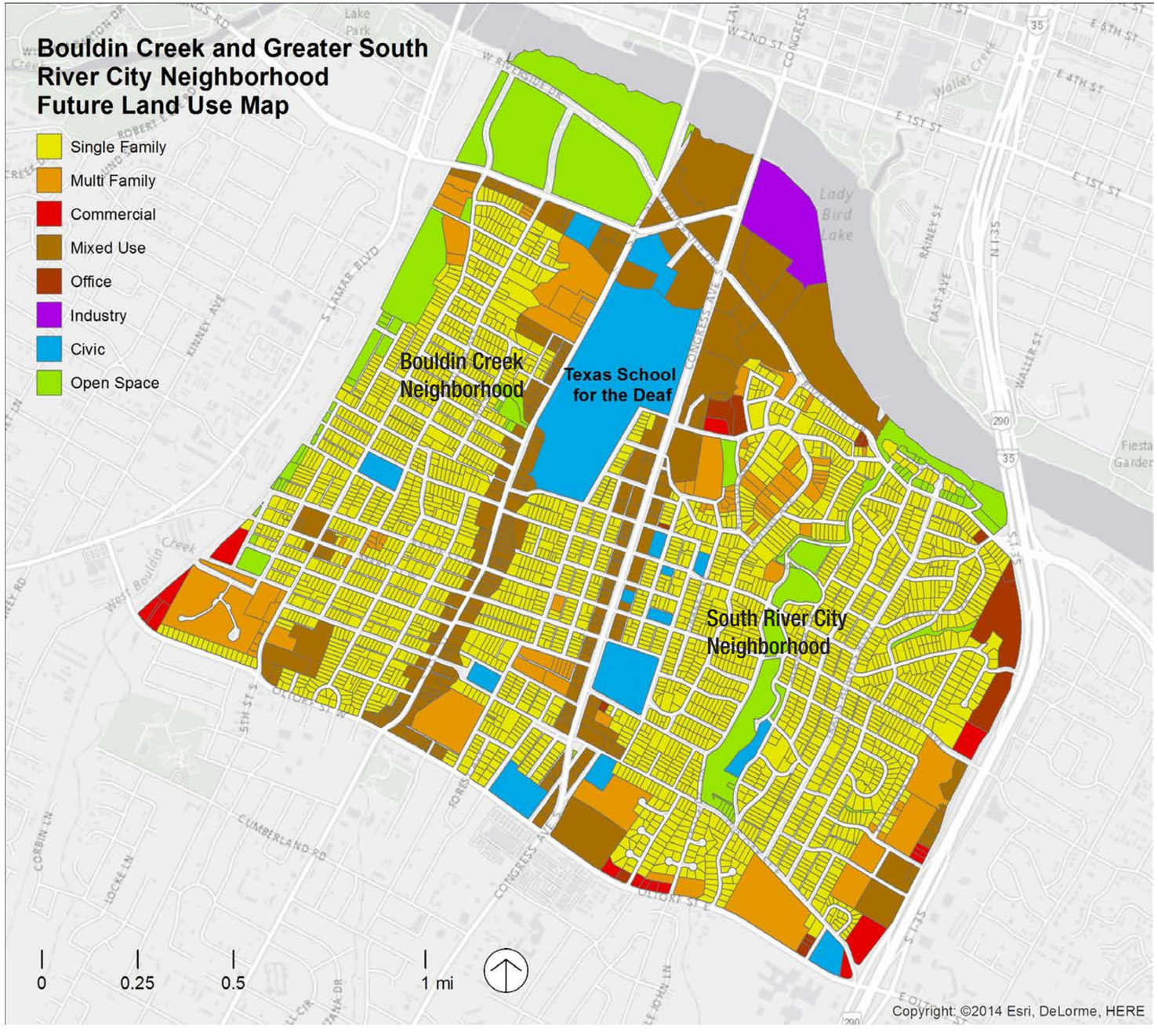
During the neighborhood planning process, neighbors and staff develop a future land use map (FLUM) that is a graphical representation of recommendations for future growth patterns throughout the neighborhood. It depicts where different types of development should or are preferred to occur.

The land use plan serves as a blueprint for future development in a neighborhood planning area. A FLUM is based on policies and land use principles and is created through the neighborhood planning process. FLUMs show the preferred land use patterns the neighborhood is trying to achieve.

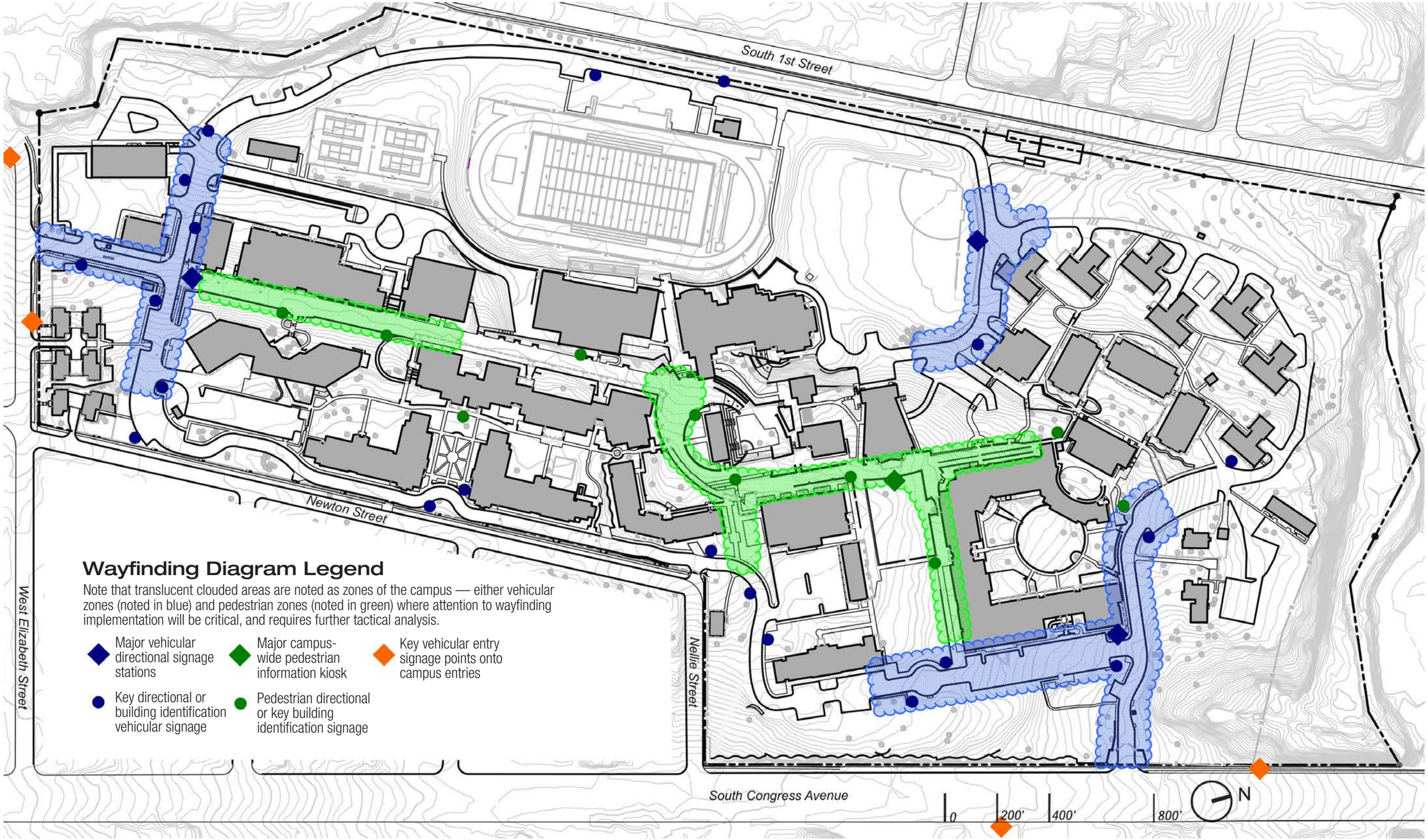
Land uses are shown parcel by parcel with different colors corresponding to different uses, such as single-family residential, office, or mixed use. The City of Austin has a wide range of land use categories.

The image at right shows the Bouldin Creek and Greater South River City neighborhood planning areas and their combined future land use map, each separately adopted by the City Council.

The future land use map indicates the desire for the neighborhood land use to remain heavily single-family residential with clustered multi-family development. Mixed use and other retail development is preferred to remain densely located to the north between the TSD campus and Lady Bird Lake, and along the major corridors of South Congress Avenue and South 1st Street.



Proposed Campus Wayfinding Plan n.t.s.



Utilities

Chilled/Heating Water Distribution

Currently, 19 of the 40 permanent buildings are served by the central plant located inside the Elizabeth Street entrance. This is equivalent to 422,000 square feet of the current 533,209 square feet of campus buildings. The central plant houses two water cooler chillers that were refabricated in 2015 as well as three natural gas boilers that were installed in 2016. A third chiller is included in the plant, but has not been refabricated at this time. It is anticipated that new cooling towers will be installed in 2017.

Primary distribution for heating and chilled water throughout the campus comes primarily via a utility tunnel that is located below the main south campus mall which then branches off to adjacent buildings. Removable pavers allow for maintenance access to the piping. Each building served has the ability to be isolated from the campus loop for repair. This utility artery does not extend north past the existing Davis Auditorium, and the master plan does not recommend extension of that artery to serve the northernmost campus.

The central plant currently has the capacity to serve the new proposed facilities indicated in the master plan without a need for expansion. Certain proposed buildings — like the new Central Services Building — will require direct-buried heating and chilled water service extended from the main tunnel. Conversely, the proposed renovations to the Cora Clinger Gymnasium are such that a tunnel or direct-buried extension is not considered cost-effective at this stage of campus development. Packaged stand-alone systems are recommended as a near-term solution rather than long-term. In Phase 4, the zone formerly occupied by the “Cottages” located in the northwestern zone of campus will receive a future facilities expansion. When that development occurs, such facility expansion will require a new northern central plant that will serve regional facilities too distant from the existing plant, and could then be piped to the Clinger Gym.

Electrical

Existing electrical service infrastructure into the campus consists of a 12.47 KV overhead riser pole feeding from public utility service along W Elizabeth Street along the south campus perimeter, which then distributes via three feeders from a pad-mounted switch near the tee-intersection of the Elizabeth Gate Drive and South Campus Loop. These feeders distribute to a mixed network of 13 substations, each equipped with primary switch, transformer, and secondary distribution. There is a mix of both exterior free-standing, vault-set, and indoor substations used throughout campus, with some serving single and others serving multiple buildings.

The existing riser pole distribution is more than sufficient to serve proposed facility and infrastructure growth on campus, which is expected to increase load by approximately 30 amps. Further, the additional facility construction is projected to increase substation network needs by an additional three or four units. Enclosed preliminary project costs anticipate the likelihood that some projects (such as expansion of the Seeger Gym or additions to the Kleberg Building) will require relocation of existing substations serving those areas.

Domestic Water and Sewer

Like electrical service, the existing 10-inch main service from the south of the campus on West Elizabeth Street is sufficient both to present and proposed future facility growth domestic water needs. Campus expansion from the late 1950s into the 2000s produced a domestic water service loop system that broadly follows the path of the campus loop drive, excluding the athletics field to the west. Excepting the concern mentioned below, regarding the area northeast of the Elementary School, significant water utility infrastructural work is not anticipated in the time cycle of the master plan.

Likewise, both building wastewater and storm water sewerage infrastructure is considered sufficient for present and proposed master plan growth of the campus. In relation to issues raised in the “Topography and Drainage” section of the Master Plan, it is recommended that further tactical investigation is undertaken during the course of future erosion and watershed stabilization efforts to the north and south boundaries of the Bouldin Creek, as a total of 10 known storm sewer outlets discharge into this watershed.

Concerns

Proposed Toddler Building and classroom expansion to the existing Elementary School will result in sizeable costs in the relocation of electrical service, domestic water, gas, fiber optic, storm water, and waste water utilities that are routed under the existing northeastern stretch of the campus loop drive. This relocation is unavoidable due to the programmatic and synergistic demands of locating needed facility growth, and these costs have been factored into the preliminary cost schedule of the master plan. Future expansions are recommended to locate these utilities along a new route clear of any proposed expansion so that this reroute is a one-time occurrence.

Another concern is of the current configuration of having only one primary electrical feed into the campus. If a catastrophic event were to occur that compromised the overhead electrical feed at the West Elizabeth Street Gate, the campus could be without power for an extended period of time if the utility were unable to make timely repairs. Austin Energy maintains an overhead electrical primary system along South 1st Street that provides a possible second fee location to the campus. However, this is the same system that provides the current feed to the campus along West Elizabeth Street. If the current overhead electrical feed were compromised, a secondary feed along South 1st Street could potentially keep the campus operational during repairs. Unfortunately, if the overhead system along South 1st Street were comprised, neither electrical feed would be able to provide uninterrupted power to the campus until repairs were complete.

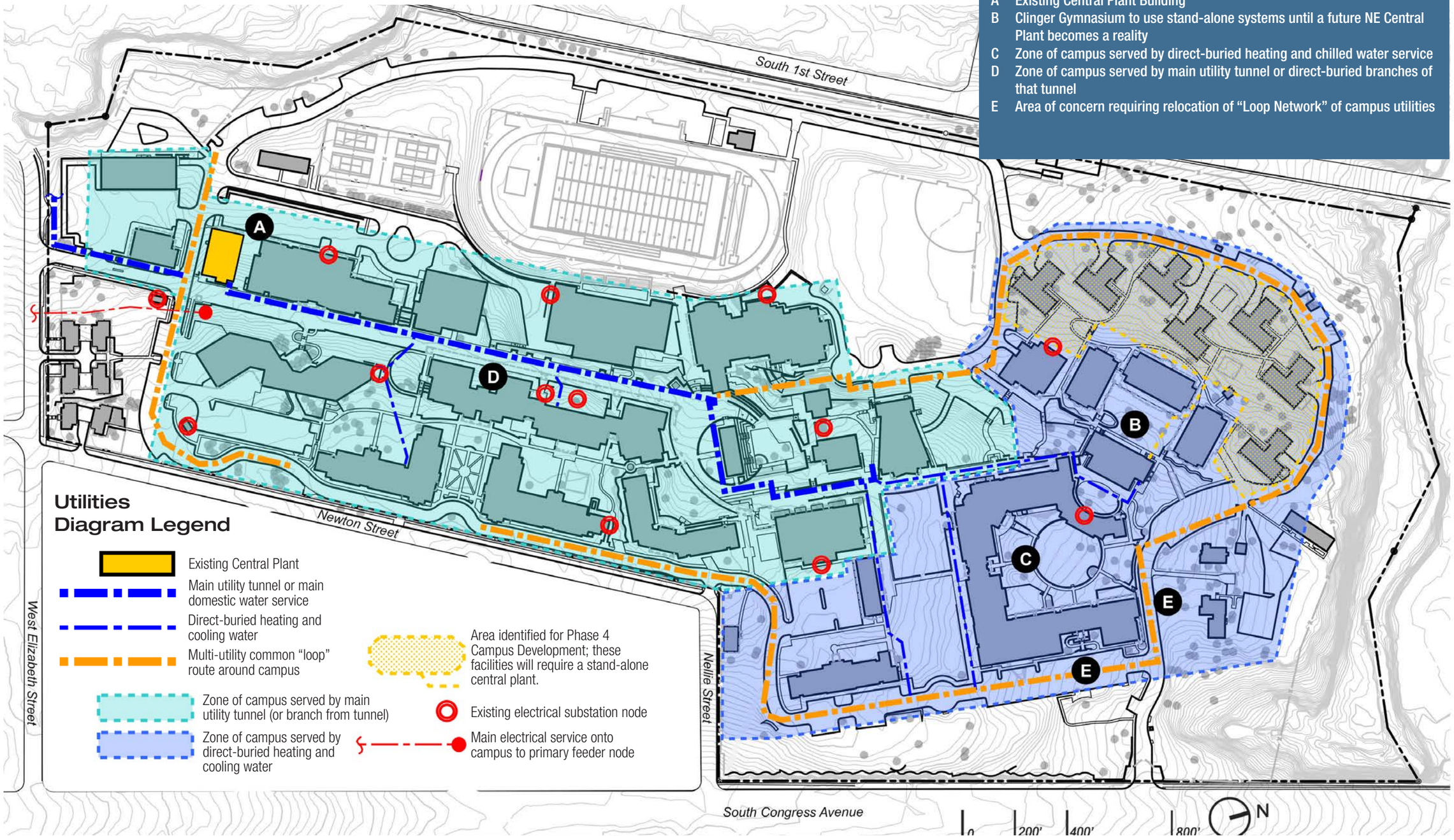
Similar to the electrical system, the only domestic water connection is provided at the West Elizabeth Street Gate. There is a 16 inch water main that is routed parallel to South Congress Avenue along the east side of the Avenue. Just north of the South Congress Avenue entry gate, the water main changes to a 12 inch and changes location to the west side of the Avenue. This would provide an adequate location to install a new 10 inch connection to the existing campus water loop giving a redundant location for domestic water access.

Additionally, the Building Control Network (BCN) is aging and has limited capacity to increase the amount of monitoring devices that it can support. It is recommended to install new fiber optic mains that have the capability to incorporate these new devices and prevent any overload on the network that could have any potential downtime.

Utilities Diagram n.t.s.

Legend

- A Existing Central Plant Building
- B Clinger Gymnasium to use stand-alone systems until a future NE Central Plant becomes a reality
- C Zone of campus served by direct-buried heating and chilled water service
- D Zone of campus served by main utility tunnel or direct-buried branches of that tunnel
- E Area of concern requiring relocation of “Loop Network” of campus utilities



Accessibility

The massive building expansion that emerged from the 1990 campus master plan for TSD attempted to simultaneously address the myriad problems that TSD had faced for decades with accessibility. Facility expansion resulting from the master plan was implemented in the midst of a statewide evolution in barrier-free design, culminating first in the nationwide adoption of civil statutes including the Americans with Disabilities Act t Guidelines (ADAAG) in 1992, followed in 1994 by Texas Government Code Chapter 469, better known in the industry as the Texas Accessibility Standards (TAS). This timeline is mentioned as much of the TSD campus expansion came about as adoption and enforcement (with TAS in particular) of these laws came to bear. Since then, and concurrent to the 2015 campus assessment, review of the entirety of the TSD campus has allowed a look beyond individual building compliance with TAS and the holistic analysis of the effectiveness of campus accessibility on a strategic scale.

One of the greatest challenges to providing a barrier-free environment at TSD is the terrain. As noted by the shadowed red-dashed line on the opposite page plan, much of the primary north-south pedestrian mall sits astride “The Spine” — a notable steep slope best described as an ‘urban ridge.’ For decades it has provided an opportunity for multiple buildings (such as Ford, Pease, Seeger, and others) to be built into the steep slope of the spine and connect lower floors with the western grade of the campus, and conversely connect upper floors to the central mall to the east. However, for students traversing between the two grades — for example during class changes between athletics-focused classes and other academic classes — many of the collections of stairs and ramps that traverse “The Spine” are less than practical. Some ramp sets, though meeting TAS requirements, would take a student many minutes to ascend in the limited time of a class change. Other routes, such as the stairs between the Ford and Pease Buildings, have no accessible route to them. These buildings, when analyzed individually, may indeed meet TAS requirements, but their design in concert may hinder students, faculty, and visitors from effectively transiting the campus in areas beset with challenging topography.

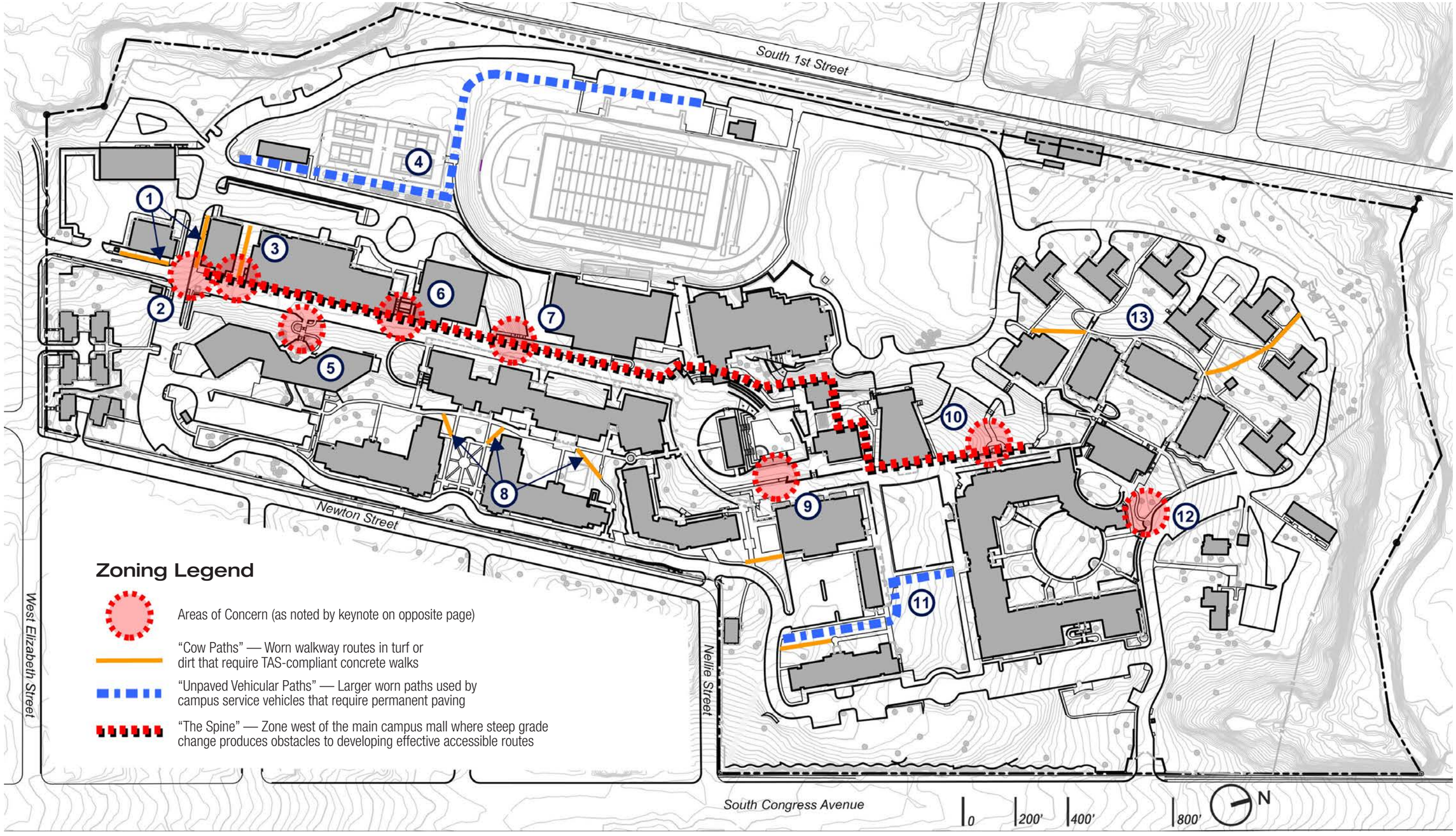
It is proposed that common spaces and building entries to new facilities and additions scheduled along “The Spine” include easily-accessible lobbies with broad, expansive lines-of-sight that connect to building elevators that can rapidly transport persons of need from one grade to another during class hours. As noted in the subsequent phasing plan and master plan, multiple additions and new construction are proposed along “The Spine” which could afford the opportunity to incorporate elevator nodes such as these. In addition to “The Spine,” a number of accessible route issues have been identified in the opposite page diagram. Special care must be given to future campus expansion near major on-campus roads (such as the loop), and consider more predominant crossing features such as elevated crosswalks in lieu of corner/perimeter ramps along the rights-of-way.

Accessibility Diagram Issue Legend

1. Accessible sidewalks and intersection ramps needed along roadways
2. Better pedestrian warning features are needed at the campus mall terminus to the Elizabeth Gate T-intersection
3. No spine traversing pedestrian route located between Central Plant and Ford
4. Permanent pedestrian/service vehicle access needed between tennis courts and football field
5. Ramps at the Kleberg west entrance onto the campus mall do not meet TAS requirements and need to be reconfigured
6. Stairway between Ford and Pease is attractive, but has no ramp, elevator, or lift option
7. Only stair access exists between Pease and Seeger to traverse from lower grade up to campus mall
8. Heavily-used cow paths observed between high school residential and academic areas, warranting concrete TAS-accessible paths
9. Steep slope northwest of the Auditorium is a challenging location to situate effective ramps to traverse between the campus mall and lower buildings such as Deaf Smith and Special Needs
10. Permanent pedestrian/service vehicle access needed from the east loop road onto the Elementary School mall
11. Accessible route northeast of Clinger is not TAS compliant
12. Additional permanent pedestrian routes needed to traverse from upper buildings down to the northwest loop road

Narrow walkways and ramps on campus, do not allow for deaf-friendly accessibility

Campus Accessibility Plan n.t.s.



Safety and Security

In the present-day and unfortunate range of circumstances that dictate safety and security considerations in the educational environment, it goes without saying that safety and security improvements are necessary on and around the TSD Campus. This need is even more paramount and constant given that students of varying ages live on campus through the week. Resulting in part with recommendations which came out of the February 2016 Campus Facility Assessment, a number of site and infrastructural improvements are recommended below, which will further equip the campus for the protective rigors of public education in the 21st Century. The following text overviews general proposals for improvements that will aid in strategically providing a safer and more secure living and learning environment for TSD students, faculty, and staff.

Perimeter Fencing

Currently, the TSD Campus perimeter has a various types of perimeter fencing construction, divided into three categories:

- **Painted tubular steel and masonry** — The more architecturally-articulated system of stone-capped, modular-brick-clad posts and square tubular steel picket frames bounds much of the northeastern campus perimeter; along South Congress Avenue and Nellie Street (most of Nellie is tubular steel only), at a single north man gate along South 1st Street, and at the Newton Street north firefighter's gate and man gate.
- **Galvanized chain-link fencing** — This system is utilized along much of Newton Street, along both watershed boundaries to Bouldin Creek, and with the exception of the aforementioned north man gate, along South 1st Street. Most of this fencing is 5 feet in height, though a 7-foot-high, barbed wire-topped fence is used along South Congress Avenue and South 1st Street at the creek boundaries.
- **CMU Masonry** — Split-faced CMU is used along the Elizabeth Street boundaries that flank the south vehicular entrance.

The height of the fencing along Newton Street and South 1st Street raises concerns as to its deterrent effectiveness, while a secondary consideration is the continued efforts of instilling an architecturally uniform and pleasing aesthetic appearance to the campus. Thus, it is recommended that over the near- and long-term period of plan implementation, that fencing be replaced along these two thoroughfares with 7 feet height tubular steel and masonry fencing. Designers working on this future project must ensure any fencing design is coordinated with regional first responders and the authorities having jurisdiction to ensure sufficient access onto campus for emergency vehicles, which may necessitate supplemental man gates or 'knock-down' segments of fencing for vehicles.

Furthermore, additional consideration should be made as to potential additional fencing along or near the south boundary of the proposed Bouldin Creek Watershed Trail as presently under consideration in the South Central Waterfront (SCW) Vision Framework Plan. The parallel efforts of the SCW plan introduces a secure pedestrian route into the northern perimeter of the TSD campus, which will symbiotically benefit campus security efforts along a perimeter that has long been an naturally obscure and overlooked boundary. This trail has many positive benefits in its connective potential between TSD and the surrounding community, but it also provides a more discreet, sheltered entry onto campus for visitors, which from a safety and security standpoint must be taken into consideration.

Vehicular Entrances

Presently, TSD maintains two primary vehicular entries and one auxiliary entry at the corner turn intersection of Newton and Nellie Streets, which is traditionally locked and closed. The southern Elizabeth Street entrance is responsible for the majority of the vehicular ingress and egress to campus, whereas the South Congress Avenue entrance — though visually and ceremonially the predominant entry point onto the TSD Campus — is often closed at off-hours, weekends, and between semesters.

Both entry points have one notable drawback that has been noted and is recommended for action in the master plan. Both entries have staffed gatehouses of more temporary construction that are side-curb situated to each entrance. This configuration reduces the guard's field-of-view, and the opposite side of the drive at both entries could be totally cut off from the guard's field-of-vision, as well as approach access, if the lane closest to the booth is occupied by a larger vehicle such as a delivery truck or SUV. Thus, it is recommended both entries convert to centerline staffed gatehouses set on an island dividing both entry drives. In the case of the Elizabeth Street entrance, where traffic and congestion occurs, it is recommended to move the gatehouse north to allow additional stack space between the gate and Elizabeth Street.

Electronic Door Hardware

As currently included in the ongoing Deferred Maintenance improvements package to the TSD Campus, integration of touchpad-based electronic door lock system will provide the dual benefits of reducing the tracking and maintenance of a master or grand master keying system as well as providing a more accurate electronic record of entry and egress to TSD Buildings by authorized students and personnel. This system will include the installation of card readers and touchpad stations at key entry points to campus buildings. Though not in place at the time of assessment efforts associated with this master plan, these systems will soon be installed and will provide a valuable layer of access security to the TSD Campus.

Exterior Lighting

In the February 2016 Facility Assessment Report, a number of TSD buildings were identified as being deficient in providing any or basic minimal footcandle levels of exterior lighting at key egress points. In addition, many campus key pedestrian routes and vehicular intersections lack sufficient exterior lighting. Particularly at pedestrian routes with stairs or ramps, this raises concerns of safety and liability for anyone walking these routes. Many of these lighting issues are being addressed in the gamut of Deferred Maintenance improvements underway at the time of issuing this master plan document. Conversely, a significant increase in exterior lighting may conflict with night sky goals in the use of outdoor lighting that is not designed with effective hoods or uplight control baffles. While these requirements may not be applicable on state property, good stewardship and livability concerns demand that any new exterior egress and pedestrian lighting, whether lamp poles, or path lighting, comply with best practices regarding light pollution. Future design teams should maintain this philosophy in the development of the campus as a response to this master plan.

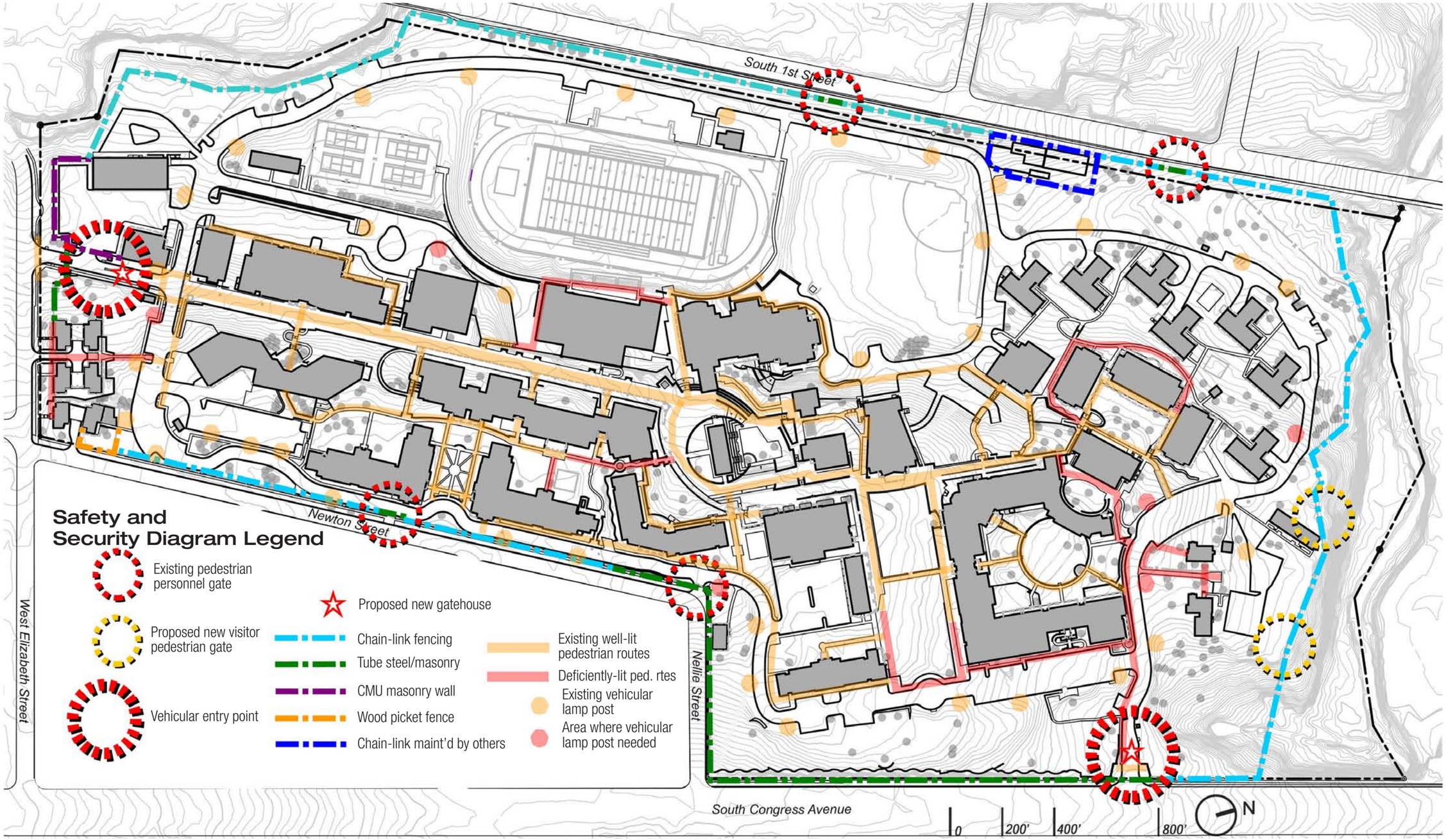
Surveillance Systems

Further investigation and strategy development will be necessary to ensure that key access points, activity areas, and perimeters to the TSD Campus are effectively documented by security camera. Numerous man gates, lengths of campus perimeter, and pedestrian-predominant and vehicular-predominant zones lack coverage by camera. While the size and perimeter of the campus is impressive (the campus perimeter alone is 2.85 miles in length), a practical but thorough system of camera implementation is necessary if not for deterrence, at least for documentation of events which may occur.

Texas School Safety and Security

Texas Education Code 37.108 requires school districts to implement a multi-hazard emergency operations plan. This is typically developed using a safety and security audit tool. One useful tool to meet this requirement is developed by the Texas School Safety Center. The 2016 facility condition assessment used many of the facility related criteria in the Texas School Safety Center tool is recommended. A full safety and security audit using this or a similar tool is recommended.

Campus Safety and Security Plan n.t.s.



The peer institution comparative tables at right are based upon surveys completed of athletics programs at each institution as identified from each school's website, and an analysis based on publicly-available aerial photography of each institution's athletics facilities present within their contiguous campus. If that institution did not have facilities present on-site, or utilized facilities from another entity, it was counted as "not having facilities for that program."

Athletic and Physical Education Programs

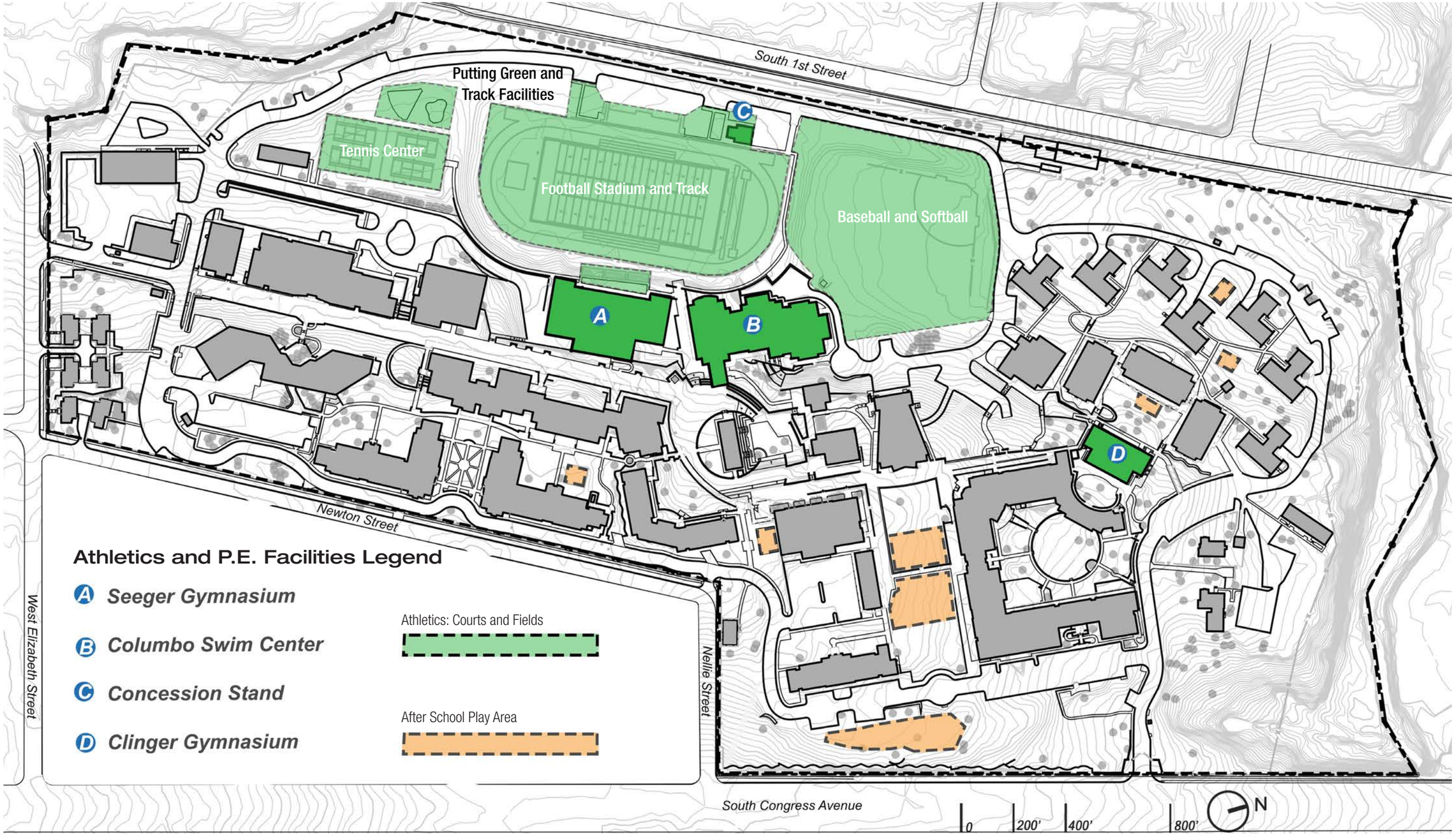
State School for the Deaf	Football	Volleyball	Girls Basketball	Boys Basketball	Baseball	Softball	Cross Country	Track/Field	Swimming	Tennis	Wrestling	Cheerleading	Golf	Boys Soccer	Girls Soccer	Hockey	Lacrosse
Alabama	•	•	•	•										•	•		
Alaska	•		•	•	•	•										•	•
Arizona	•		•	•						•							
Arkansas	•	•	•	•				•				•					
California	•	•	•	•	•	•		•			•	•		•	•		
Colorado	•		•	•				•			•						
Connecticut		•	•	•		•		•				•		•			
Delaware		•	•	•										•			
Florida	•	•	•	•			•	•	•	•	•	•			•		
Georgia	•	•	•	•										•	•		
Illinois	•	•	•	•				•									
Indiana	•	•	•	•	•	•	•	•			•	•					
Iowa	•	•	•	•				•				•					
Kansas	•	•	•	•				•									
Kentucky		•	•	•				•									
Louisiana	•	•	•	•				•				•					
Maine			•	•										•	•		
Maryland	•	•	•	•	•	•		•			•	•					
Massachusetts		•	•	•				•				•		•	•		
Michigan	•	•	•	•				•									
Minnesota	•	•	•	•				•				•					
Mississippi	•	•	•	•				•									
Missouri	•	•	•	•			•	•									
Montana		•	•	•		•	•	•	•	•	•		•	•	•		
New Jersey		•	•	•				•						•			
New Mexico	•	•	•	•				•				•					
New York		•	•	•				•						•			
North Carolina	•	•	•	•				•				•		•	•		
Ohio		•	•	•										•	•		
Oklahoma	•	•	•	•				•				•	•				
Oregon	•	•	•	•				•						•	•		
Pennsylvania		•	•	•				•				•		•	•		
Rhode Island			•	•				•				•		•	•		
South Carolina	•	•	•	•				•			•	•					
Tennessee	•	•	•	•				•	•			•					
Texas	•	•	•	•	•	•	•	•	•	•	•	•	•				
Utah		•	•	•	•	•		•	•	•	•		•	•	•		
Virginia		•	•	•			•										
Washington	•	•	•	•								•		•	•		
West Virginia			•	•										•	•		
Wisconsin	•	•	•	•				•									

Athletic and Physical Education Facilities

State School for the Deaf	Football Stadium	Gymnasium	Baseball Field	Softball Field	Track/Field	Indoor Natatorium	Outdoor Natatorium	Tennis Courts	Soccer Field
Alabama	X	X			X	X			*
Alaska		X							
Arizona	X	X			X		X	X	
Arkansas	X	X			X				
California	X	X	X	X	X		X		X
Colorado	\	X			\			X	
Connecticut		3				X			
Delaware		X							\
Florida	X	2		X	X	X		X	*
Georgia		2							
Illinois	X	2			X				
Indiana	X	X	X	X	X	X		X	
Iowa	X	2			\	X			
Kansas	\	2				X			
Kentucky		X							
Louisiana	X	2			X	X			
Maine		X							
Maryland	X	X	X		X	X		X	
Massachusetts		X							\
Michigan	X	X	X	X	X				X
Minnesota	X	X						X	
Mississippi	X	X							
Missouri	X	2			X	X			
Montana		X		X	\	X			\
New Jersey		X			\				\
New Mexico	X	X			X				
New York		X			\				\
North Carolina	X	2			X				*
Ohio		X						X	X
Oklahoma	\	X						X	
Oregon	X	X	\		\				*
Pennsylvania		X			\				X
Rhode Island		X	\		X			X	X
South Carolina	X	X			X				
Tennessee	X	2							
Texas	X	3	\	#	X	X		X	
Utah	^	X	^		^				^*
Virginia		X							X
Washington	X	2			\				*
West Virginia		X							
Wisconsin	X	2	X		X			X	

X Institution has facility for this program
* Appears to use football field
\ Appears to only be practice
Uses baseball field
^ Shares facilities at adjacent campus

Campus Athletic and Physical Education Facilities Plan n.t.s.



Community Analysis

Overview and Dynamics

The Texas School for the Deaf Campus resides within one of the more vibrant and dynamically-shifting regions of the City of Austin — a reality which the institution must realize, respond, and relate to in its ongoing development. The campus is surrounded by a blend of active commercial, single-family, and multi-family development that is a melting pot of new and old construction, differing sociocultural demographics, and varying age groups. Perhaps it is not too bold to say that some of those people with the greatest pride and vested interest in their community — and likewise among the most outspoken — reside in this area of the city. Further, the South Congress Avenue region continues to progress through a transformative period — as different and allied forces continue to pursue the further development of the area into a more livable and sustainable environment. It is therefore very important to understand these dynamics and incorporate a functional elasticity into the TSD Master Plan which allows for the continued responsiveness over time to continued development in this area of Austin. All of these elements point to both the South Congress District being a crucial element to the Austin metropolitan area, and likewise TSD is a crucial element of the South Congress District.

In the course of reviewing parallel ongoing planning efforts in nearby areas of the community, and meeting with community and institutional stakeholders, the following four factors or groups were identified as key foci to sustain the Texas School for the Deaf as an engaged partner and presence within the community. They include:

- The Austin Deaf Community
- Regional neighborhood associations and districts
- Regional businesses and commercial interests
- Ongoing and enhanced community use of facilities

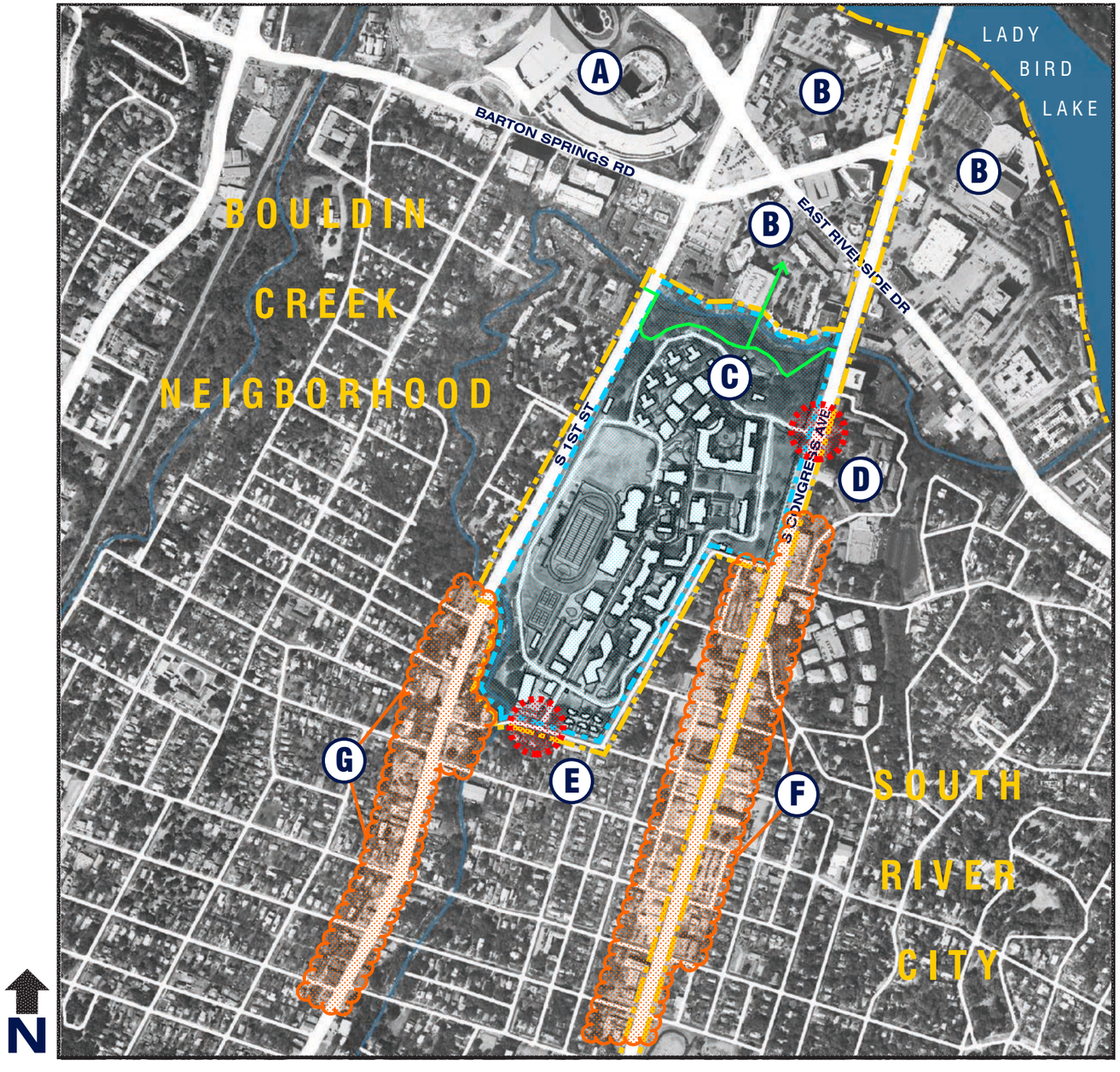
A strong spirit of partnership and involvement already exists between TSD and these groups, while further strengthening of these organizational relationships will undoubtedly benefit the School, enhance pride and community investment within the immediate community. This section explores what dynamics are occurring at present related to the above four factors/ groups, and what planning and design responses TSD should incorporate in response to those dynamics.

The Austin Deaf Community

A proud and vibrant group, the long-time presence of TSD in Austin has resulted in creating what is likely the largest deaf community in Texas. Austin has become a regional and national leader in the realm of deaf-owned businesses. With many involved with or alumni of TSD, it is only natural that the resources and activities at TSD often provide synergy and a location for events. Particularly for TSD Alumni, elements of campus and institutional heritage, such as the preservation of disused campus facilities such as the Cora Clinger Gymnasium and its lower-floor bowling alley, or continued operation of the Heritage Center and on-campus library, remain of paramount importance. Maintaining continued access for alumni and their families to these facilities has been voiced as a concern, even in the present-day necessities of campus security. Finally, new facilities proposed in the master plan, such as gym and athletics improvements, or student life and activity facilities, should be designed not only with the students, faculty, and staff of TSD in mind, but also the involved participation of the Austin Deaf Community, who takes a vested interest in events held at those facilities.

Community Activity Diagram

(Key located on following page)



Community Analysis

Community Activity Diagram Key
(Diagram to the left)

The following is a review of the keyed activities noted in the opposite diagram of the immediate Austin community that surrounds TSD:

- A Palmer Events Center and the Long Center for the Performing Arts at Butler Park
- B Elements in consideration for the South Central Waterfront Vision Framework Plan call for a long-term transition from large footprint, more corporate-aligned development between TSD and Lady Bird Lake to more mixed-use, open space-friendly development
- C The same South Central Waterfront plan mentioned in B above also proposes a public urban creek "Canopy Walk" which follows Bouldin Creek through the north edge of the TSD Campus
- D The South Congress Avenue entrance to the TSD Campus, though large and visible, has functionally become a secondary entry that is closed much of the time
- E The Elizabeth Street Gate has become a vital entry and egress point into campus
- F Decentralized commercial development over the past 15 years has transformed this stretch of South Congress Avenue into a cultural mecca of Austin. Shops and restaurants, continued development and mixed-use activity continue to be built along this arterial thoroughfare.
- G Less prominent than South Congress Avenue, but nonetheless busy, commercial activity on South 1st Street has made this area beginning south of W Gibson St a vibrant area, with shops, cafes, and food truck venues prominently seen.

A rendering of the proposed elevated linear park trail envisioned in the ongoing South Central Waterfront Vision Framework Plan for the northern boundaries of the TSD Campus over Bouldin Creek (Image courtesy of The City of Austin, the U.S. EPA, and CMG Landscape Architects)

Regional Neighborhood Associations and Districts

The TSD Campus is bounded by two of Austin's most active neighborhood organizations — to the north and west lies the Bouldin Creek Neighborhood, while to the east of South Congress Avenue lies the Greater South River City Neighborhood, which is represented by three key associations: South River City Citizens (SRCC), South Austin Commercial Alliance (SACA), and Area Merchants. These groups were contacted through the course of this master planning exercise to gain insight and input, most notably through stakeholder engagement events.

Through these stakeholder engagement activities, the most common point of feedback received from neighborhood representatives is how little daily engagement occurs between TSD and the surrounding businesses and community. While much of this detachment is unavoidable due to the functional nature of an education institution and the otherwise largely residential and commercial activities that surround TSD, it is hoped that interface opportunities identified in this master plan and allied efforts such as the South Central Waterfront Vision Framework Plan may 'lift the veil' that inadvertently exists. That being said, both neighborhood associations support efforts proposed in this master plan, such as continued campus development, proposed safety and security improvements, sustainability initiatives, and the stabilization and qualitative improvement to the Bouldin Creek watershed as it bounds the TSD Campus.

Regional Businesses and Commercial Districts

One area of sweeping change in the community that surrounds the TSD Campus since the 1991 Master Plan has been the influx of commercial and mixed-use development along South Congress Avenue, and to a lesser degree, similar development along the South 1st Street corridor. Interestingly, this development begins on both thoroughfares approximately at the intersecting bounds of the TSD Campus, and from there continues south. The common denominator to these developments, at least from the retail and restaurant standpoint, has been indigenously-developed local businesses which naturally cater to Austin's independent and unique culture. Mixed-use multi-family development has also proliferated along South Congress Avenue. The effects of this have strained vehicular and parking resources of the immediate arterial roadways, and those few nearby parking resources, as well as limited residential side-streets and thoroughfares which have been granted permits for public parking. The potential exists that, should TSD be able to extend the presence and expanded public use of its on-campus athletic and cultural facilities, that these could be successfully marketed to the public as a popular venue, given their proximity to dozens of Austin's most popular restaurants and shops.

Ongoing and Enhanced Community Use of Facilities

TSD already partners with over 50 regional for-profit and not-for-profit partners, school districts, and other community partners for their use of TSD athletics, indoor student life and cultural facilities. TSD recognizes this as an unrealized, potentially larger source of revenue and outreach to the surrounding community. That being said, increasing community use of TSD facilities and resources cannot be solved solely by facility planning solutions. In addition to improved on-campus and public campus perimeter wayfinding, and facility improvements proposed to athletics, cultural, and student life facilities, it is proposed to TSD Administration that increased marketing, social media interface, and direct engagement with the surrounding community will result in a marked increase in public use of facilities.

Disused buildings and properties along South Congress Avenue have seen a massive rebirth in the past 15 years, as adaptive reuse and mixed-use development have transformed the drag into one of the most vibrant areas of Austin.

ENROLLMENT & SPACE MODELING

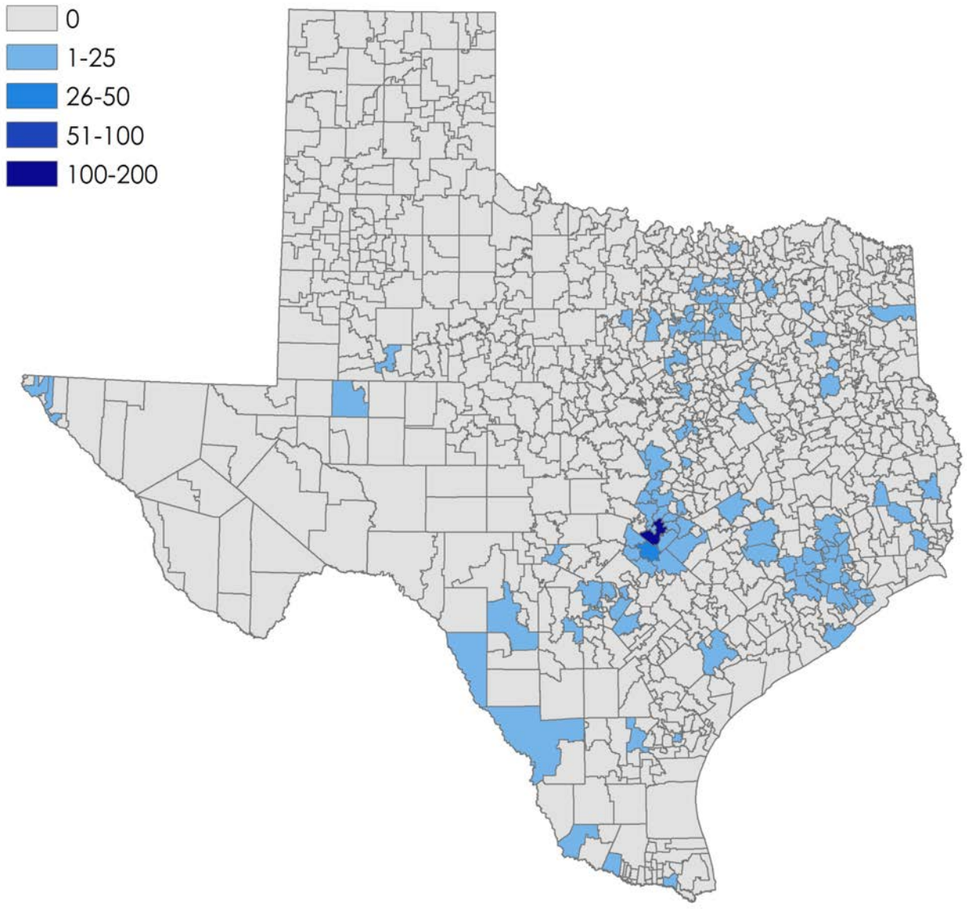
F

Enrollment and Space Modeling

Enrollment Trends and Forecasts

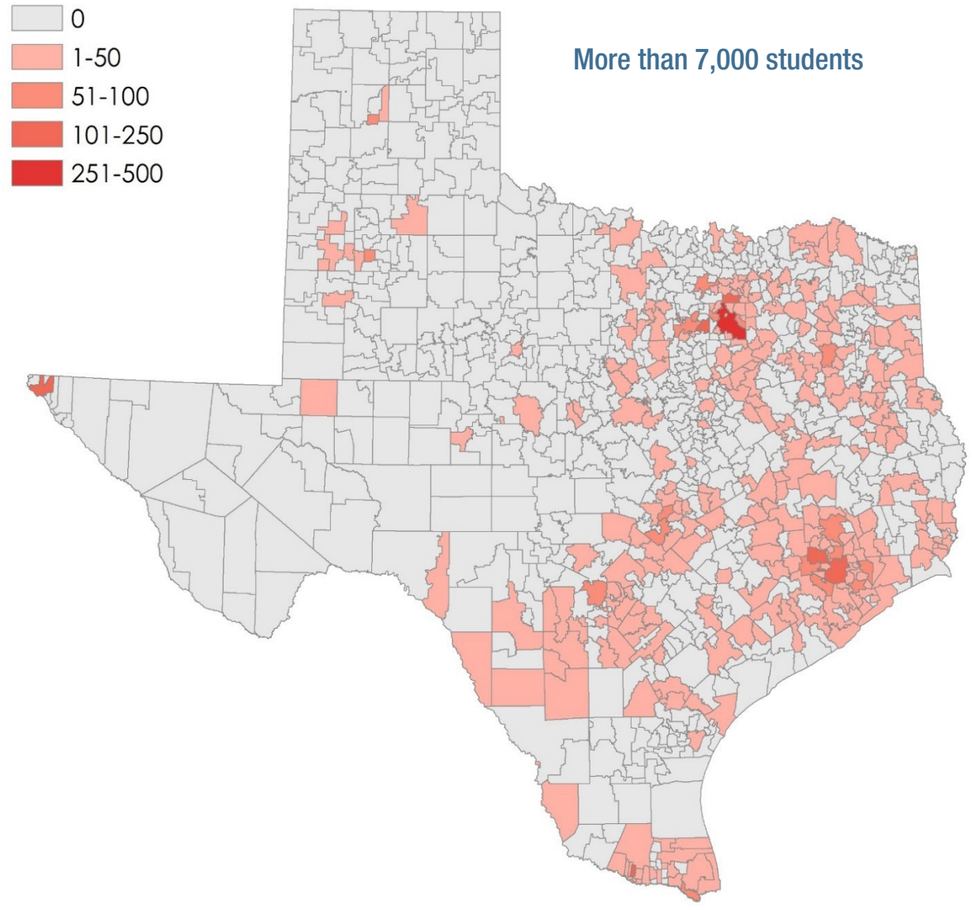
TSD Student Locations

The image below shows the home districts of TSD students. The home district location is based on 2015-16 Public Education Information Management System (PEIMS) data provided from the Texas Education Agency (TEA). The TEA database included 530 K12 students, and does not include students more than 18 years of age. Due to Family Educational Rights and Privacy Act (FERPA) requirements, districts with one to five deaf/hard of hearing students have the same designation. TEA categorizes deaf/hard of hearing as deaf/hard of hearing. For the sake of this the master plan, these students will be categorized as deaf/hard of hearing.



Non-TSD Deaf and Hard of Hearing Student Locations

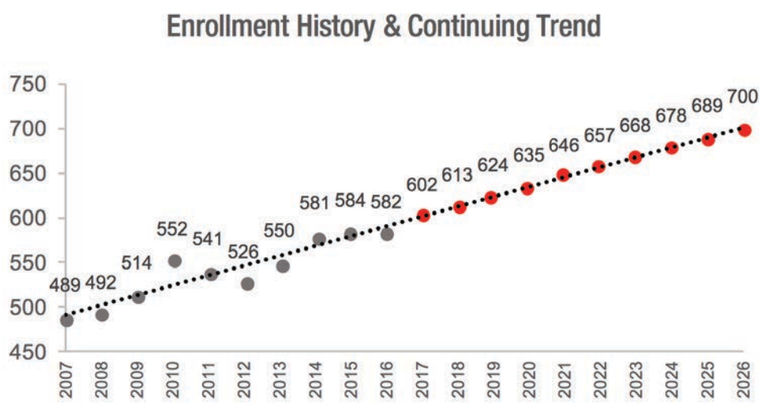
The image below shows the home districts of students designated deaf or hard of hearing in the TEA 2015-16 PEIMS database. Due to FERPA requirements, districts with one to five deaf/hard of hearing students have the same designation. The TEA database includes more than 7,000 deaf/hard of hearing students.



Enrollment Trends and Forecasts

TSD Enrollment History and Trends

TSD enrollment has trended upward for the last 10 years as indicated on the chart below. While there have been yearly increases and declines within the upward trend, the overall 10-year trend has a statistical correlation of 94, which is considered strong.



Enrollment Forecast

Two methods were used to forecast TSD enrollment (preschool through transitional). The first method is a continuing trend. The continuing trend forecast uses statistical analysis of the past 10 years of enrollment. The chart above shows historic TSD enrollment and forecasts enrollment using the continuing trend. While there is no guarantee the trend will continue, the 10-year trend statistically strong as noted above.

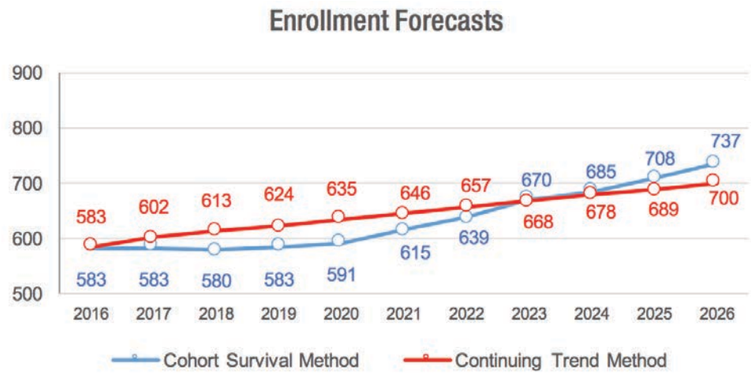
The second forecast method used was cohort-survival. This method uses the percentage of students who previously progressing from one grade to the next to establish a "survival" rate. This method also provides forecasts by grade level. This method has proven reliable for school district enrollment forecasts for decades, but is not guaranteed.

Grade Level Bubbles

The table to the right summarizes the cohort survival forecast for each grade level. The highlighted grade levels indicate two grade level bubbles moving through the district. These bubbles, if continued, will result in rises and falls in space efficiency.

Combined Forecasts

The chart below shows both the Continuing Trend Model and the Cohort Survival Method. As the chart indicates, the models result in similar forecasts.



TSD Enrollment Correlation with Texas Enrollment

Over the last 10 years, the correlation between TSD enrollment and Texas public school enrollment has been 84, which is considered statistically moderate. Texas public school enrollment is forecasted to grow 1.5 percent per year through 2022 by the U.S. Department of Education. This Texas public school student growth rate is consistent with the forecasted TSD growth to the left.

Cohort Survival Model

Grade	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
PI	23	20	18	18	17	18	19	18	28	20	22	23	23	24	24	25	25	26	26	27
PS	8	10	12	16	7	12	22	18	19	25	23	24	26	28	29	31	33	34	36	38
PK	7	7	4	12	15	10	19	19	11	8	15	16	17	17	18	19	20	20	21	22
K	10	10	11	7	13	14	9	20	22	12	8	16	17	17	18	19	20	20	21	22
1	20	13	14	13	13	12	14	10	17	24	14	9	18	19	20	21	21	22	23	24
2	11	15	16	17	16	13	15	17	11	21	28	16	11	21	22	23	24	25	26	27
3	12	9	17	14	21	14	17	16	20	13	24	32	18	13	24	25	26	28	29	30
4	15	15	11	25	17	23	16	22	20	21	15	28	38	21	15	28	30	31	32	34
5	22	20	23	16	26	22	22	19	30	25	25	18	33	45	25	18	34	35	37	38
6	22	22	25	39	25	28	25	29	22	32	30	30	22	41	54	31	21	41	43	45
7	27	24	32	27	41	30	39	30	28	28	38	36	36	26	48	64	36	25	48	51
8	19	34	34	42	30	48	40	39	32	34	32	43	41	41	30	55	74	42	29	55
9	44	33	45	38	41	33	53	57	43	38	39	37	50	48	47	34	63	85	48	33
10	47	48	47	54	35	41	33	58	54	48	39	40	37	51	48	48	35	64	86	49
11	61	53	47	57	65	41	48	45	59	59	56	45	46	44	59	56	56	41	75	100
12	44	61	50	52	52	58	44	47	41	59	57	54	43	45	42	57	54	54	39	72
TR	17	25	26	25	34	28	55	52	66	60	61	59	56	45	46	43	59	56	55	40
SN	80	73	82	80	73	81	60	65	61	55	57	54	51	48	45	42	39	36	33	30
All Students	**489**	**492**	**514**	**552**	**541**	**526**	**550**	**581**	**584**	**582**	**583**	**580**	**583**	**591**	**615**	**639**	**670**	**685**	**708**	**737**

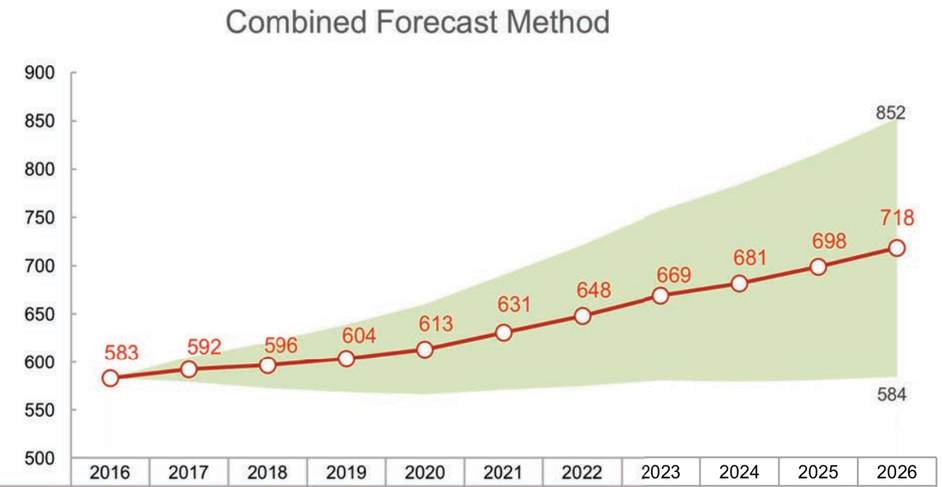
Enrollment Trends and Forecasts

Combined Method Forecast

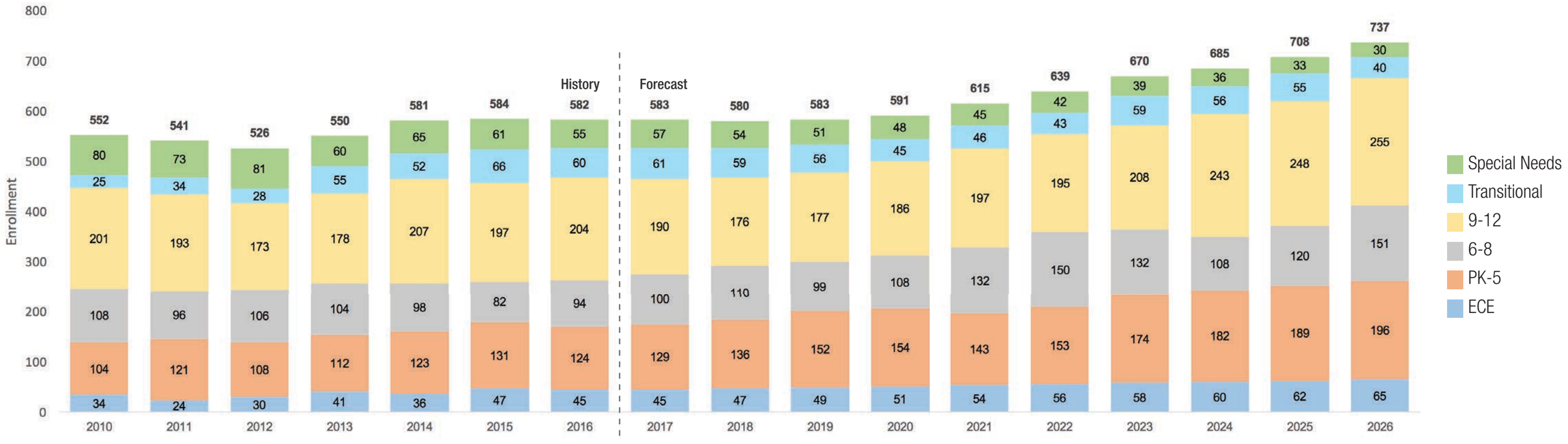
The red line on the chart to the right illustrates the total student forecast using the average of the continuing trend and cohort survival methods. The green background depicts the standard deviation to model high and low forecasts.

Cohort Survival Visualization

The cohort survival method for subgroups is the basis of building square footage demand modeling for each subgroup indicated below. Historic enrollment growth in Early Childhood Education (ECE), Special Programs and Transitional may have been limited due to space limitations. Enrollment in these programs may increase with more capacity.



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
High forecast	583	605	620	639	660	691	721	757	784	816	852
Low forecast	583	579	573	568	566	571	575	581	579	581	584
Avg Trend/Cohort	583	592	596	604	613	631	648	669	681	698	718

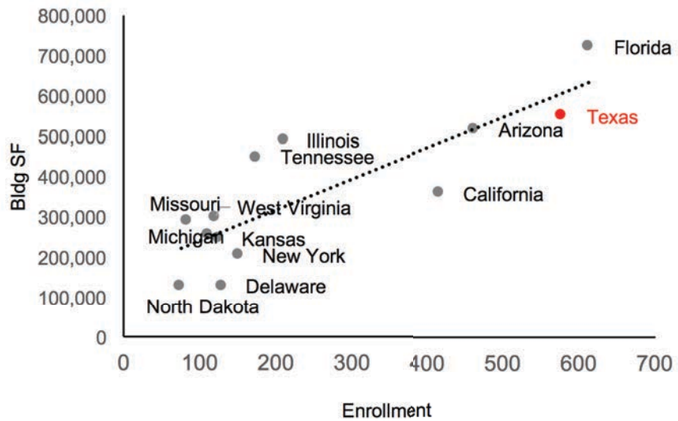


District Space Demand Modeling

Schools for the Deaf Benchmarking

The chart below shows how TSD total building square feet compares to deaf school facilities in other states. Of the 19 state schools for the deaf from which data was collected, 13 featured resident students like TSD. The chart below summarizes building space (square feet) per student for these 13 schools.

Since the enrollment of these schools varied from 76 to 616, it would not be good practice to use an average of these schools for space demand modeling. Thus, a statistical analysis was performed on the data to develop a predictive tool for modeling square footage demand. The image below is the scatter plot of these 13 schools. The red dot is TSD, and shows that TSD current square footage is below the peer trend line. The correlation of the trend line is 82, which is considered strong.



Texas Public Schools Benchmarking

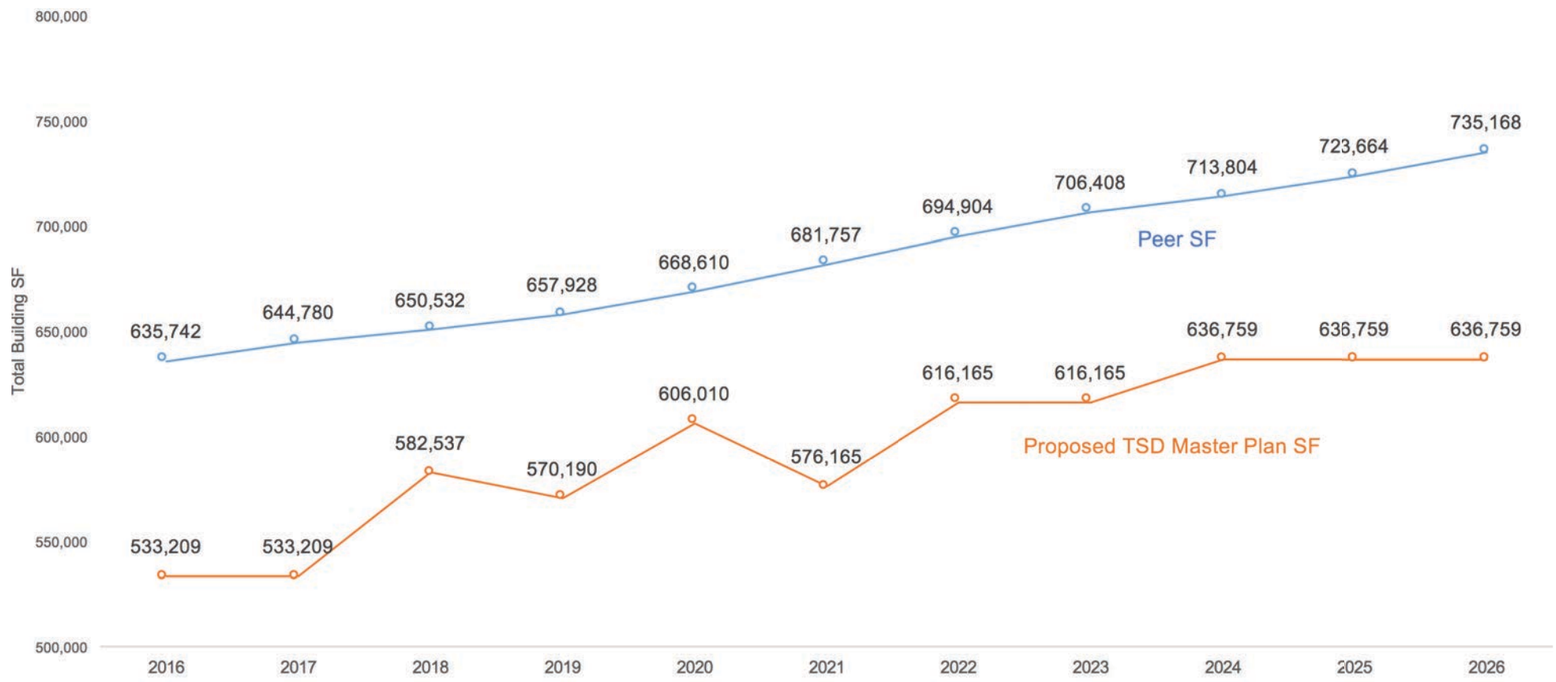
Using the statistical analysis of more than 200 Texas school districts, the academic campuses of TSD were modeled. This comparison did not include residential facilities or special purpose spaces specific to TSD. This comparison is based on current enrollment, and shows how many square feet TSD would have if consistent with Texas districts of similar enrollment. This comparison includes a 20 percent square foot adjustment for deaf space design principles. The correlation of the analysis for Texas districts is 98, which is considered strong.

Current TSD academic space	263,400 square feet
Texas District Peers	249,600 square feet
Difference	13,800 square feet

Total Building Space Demand Model

The intent of this model is to provide portfolio-wide space guidance. Using the continuing enrollment trend and predictive formula from peers, the space (building square feet) demand was developed. The chart below shows the current building space compared to the building square feet TSD would have if consistent with peers, given a continuing enrollment trend (blue). The orange line represents the total building square feet for the proposed master plan. See the Cost of Ownership modeling in Section I — Design Guidelines.

$184 Million estimated 30-year cost of ownership savings by keeping total building square footage below peers and strategic renewal.



Note: Dips in total square foot model correspond with net reduction of building space when older buildings are removed.

Academic Campus Space Demand Modeling

The chart below summarizes the current space utilization and the forecasted 10-year utilization. The 10-year forecast assumes the enrollment growth indicated previously.

Campus Space Utilization

The following chart summarizes the current and projected space utilization rate at each academic campus. These utilization rates are for academic classrooms and labs. Utilization rates were determined by comparing capacity of each space to actual enrollment of each space. For the elementary, this was done on a home room basis. For secondary schools, this was done on a period-by-period basis for each room. This model assumes capacity of elementary rooms at 90 percent utilization and 75 percent for middle/high school. These multipliers allow for scheduling and grade enrollment variations.

Deaf Space Considerations

Deaf space design guidelines recommend a smaller number of students per classroom and U-shaped seating arrangements. This results in lower space utilization rates than traditional school buildings. Conceptual modeling indicates a deaf space campus would require 20-25 percent more space than a tradition campus.

Early Childhood Education (ECE)

There are currently three occupied classrooms. An additional three classrooms are needed to accommodate peak loads in the next ten years.

Elementary (ES)

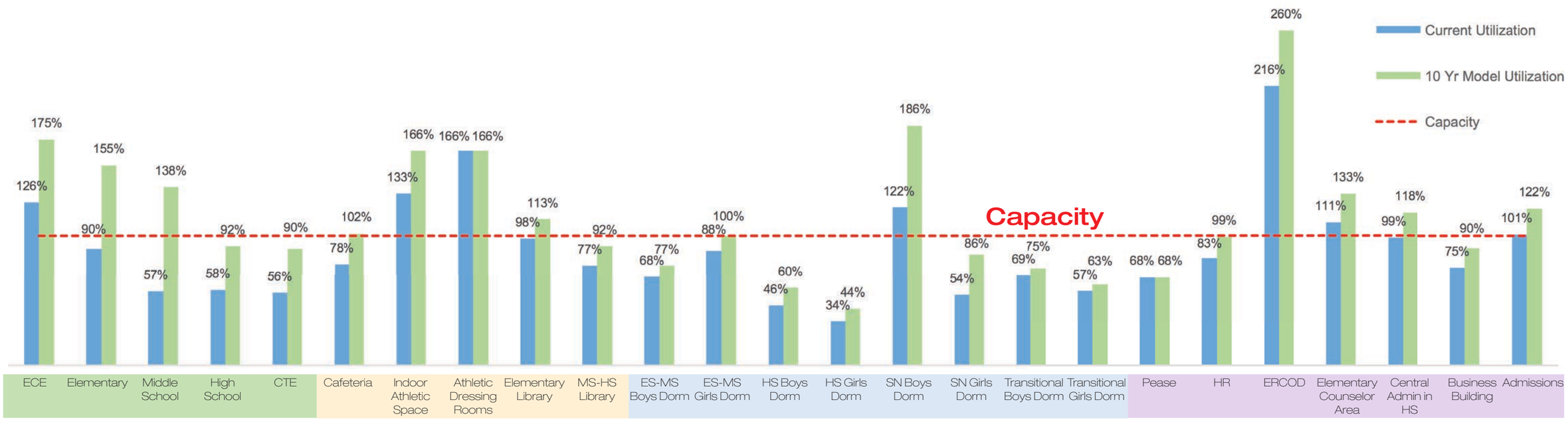
The elementary is currently near capacity, and enrollment forecasts indicate moderate growth in the next ten years. To accommodate this growth, three additional classrooms will be needed. This could be accomplished by moving middle school/high school special needs rooms to the middle school/high school building. Additional capacity could be realized at the elementary by moving counseling or auditory suites to a central services building.

Middle School (MS)

The middle school is forecast to experience fluctuations in enrollment due to “bubbles” working their way through TSD. The bubbles are forecast to enter middle school in 2021. The bubbles are forecasted to move on to high school in 2023-24. Since the middle school and high school are in the same building, consideration should be given to shifting room uses in the middle school/high school to accommodate these bubbles.

High School (HS) and Career Technology Education (CTE)

The high school and CTE space was evaluated together as high school students utilize both facilities. If program offerings do not change, the current facilities will be near capacity in ten years based on forecasted growth. Given recent statutory changes by the 83rd Legislature (reference Section 28.00222, Subchapter A, Chapter 28 of the Texas Education Code) in requirements for career-based education it is anticipated additional CTE spaces will be needed.



Cafeteria
The current cafeteria dining area is 2,750 square feet. Using Council of Educational Facility Planners (CEFPI) guideline of 10-14 square feet per student, the capacity of the dining room is between 200 and 275 students. Using this capacity the dining space would serve the projected 10-year enrollment of the elementary and middle school student body if they dined separately. The high school enrollment is projected to reach 255 in 10 years, which would be tight in this space if the high school dined separately from other age groups. For this cafeteria to serve projected student enrollment the elementary, middle school and high school will need to dine separately. This space will not be adequate to house a combined middle school and high school student body.

Indoor Physical Education and Athletic Space
Data from districts across the state indicates districts with 500 to 1,000 enrollment typically have four to five major indoor athletic spaces including play gyms, practice gyms, competition gyms and indoor workout rooms. This count does not include weight rooms or pools. TSD currently has three gyms, so one or two additional gym or indoor workout spaces could be justified to be consistent with school districts of similar enrollment.

Locker Rooms
Both the number of locker rooms and size of locker rooms was analyzed. The number of locker rooms is typically based on peak load of seasonal activities and physical education. There are currently four locker rooms available other than the two locker rooms that serve the natatorium. The locker rooms that serve the natatorium are not available for TSD Gym use because the required second egress would be through the pool area, which is not safe in the event the pool is unattended. Based on the peak load of seasonal sports, four additional locker rooms appear appropriate to be consistent with peer benchmarks.

Libraries
Elementary library stack/reading area is 1,520 square feet. Using the Texas Education Agency library space guide (1,400 square feet plus 4 square feet for each student above 100 campus enrollment) the current library stack area is adequate. Using the projected enrollment of 186 the library should be 1,744 square feet. The library would be 13 percent under-sized for projected enrollment. The middle school/high school library is 2,848 square feet. Using the same TEA guideline as above, the middle school/high school library should be 2,192 square feet for current enrollment and 2,624 for the combined middle school/high school projected enrollment of 406. Based on this guide, the middle school/high school library is adequate for current and forecasted 10-year growth. Consideration should be given to how the trend of decentralizing libraries will impact space utilization.

Student Housing
The chart on the previous page summarizes the 2016 utilization rate and 10-year forecasted utilization. Capacity is based on double occupancy for all residential buildings except special needs, which is based on single occupancy.

Administration Space
The chart shows current utilization rate and the 10-year forecasted rate assuming the administrative staff grows at the same rate as forecasted enrollment. Benchmark for utilization is the mid-range of several benchmarks including General Services Administration, Building Owners and Managers Association, and International Facility Managers Association. The benchmarks ranged from 170 square feet per occupant to 300 square feet per occupant. A mid-range of 235 square feet per occupant was used as the benchmark. Usable square feet per occupant includes all interior space in the administrative area except walls, mechanical rooms, stairs and elevators.

Many of these office areas are in self-sustained small areas of 1,300 to 2,500 square feet. In such a small area the square feet per occupant tends to be higher due to fewer occupants sharing common facilities such as restrooms, meeting rooms, workrooms, copy rooms, reception areas and break rooms. Consolidating these self-sustained areas in one common purpose built facility improved space efficiency 4 percent.

FACILITY NEEDS & CONCEPTUAL PLANS

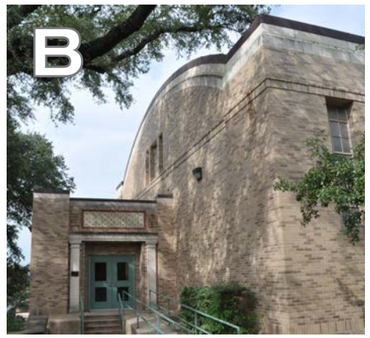
G

Facility Needs & Conceptual Plans

Phase 1

Toddlers Building
Due to lack of space in the Elementary building, the toddler program was moved to the old superintendent's house, currently known as the Toddler building. The program has outgrown the available space. Therefore, the toddler program will be relocated to a new addition at the Elementary for proximity to related programs.

Clinger Gym
Built in 1928, Clinger Gym plays a vital role in TSD campus history. Code violations and energy efficiency of the building envelope will be addressed in the renewal program. Once the issues are resolved, the vacated lower levels will be repurposed to an elementary multipurpose activity space and the historic two-lane bowling alley will be restored.



Auditorium Building
Due to deaf space deficiencies, accessibility deficiencies and failing building systems the auditorium will be replaced with a 750-seat multipurpose flex theater facility. This facility can house distance learning, performing arts, meetings and large groups. The U-shape configuration will conform to deaf space design guidelines.

Ford Building
Due to the expansion of some Career and Technology (CTE) programs, the existing space will be repurposed and the multipurpose meeting room will be relocated to the new central services building to make room for CTE programs.

Central Services Building
Administrative activities are spread out across the campus, depending on available space. Admissions and Human Resources are located in temporary trailers that are past their life span. Relocating administrative activities to the Central Services building will allow additional classroom space in academic buildings and the removal of temporary trailers.

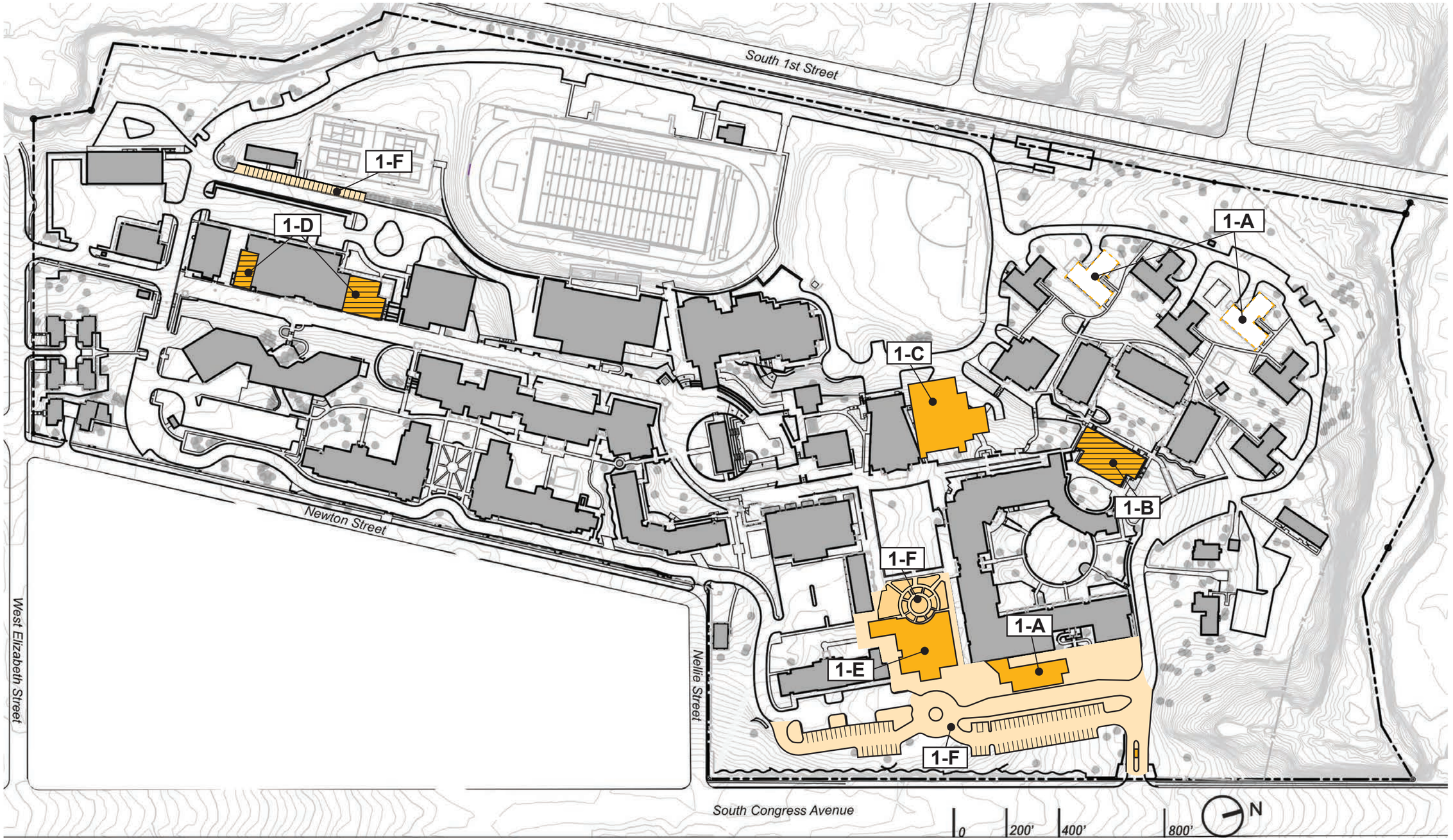
Note: Solid color denotes new construction. Solid color with hatching denotes renovation and repurposing of existing buildings. Dashed outlines denote demolition of existing structures. Finally, half-tone shading denotes site improvements.

Phase 1

- **1-A** New Toddler Center
- **1-B** Repurpose Clinger Gym to practice/play gym, elem activity center
- **1-C** New flex multi-purpose/theater to replace auditorium
- **1-D** Reconfigure Ford photo lab/culinary arts to three CTE programs
- **1-E** New Central Service Center
- **1-F** Site improvements (parking, roads, covered walks, accessibility

***This list does not include abatement and demolition projects*

Phase 1 Work Plan n.t.s.



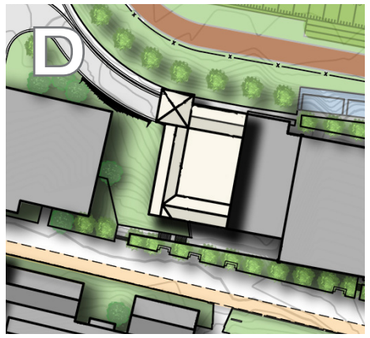
Phase 2

Koen and Lewis Dorms
The current configuration of the dorms does not allow for multiple students to be in the public spaces and still be able to communicate with one another. Therefore, existing spaces, including kitchens, will be renovated to improve accessibility, improve deaf space layout and create a more home-like atmosphere.

Education Resource Center on Deafness (ERCOD) Building
The ERCOD building is currently housing the Outreach staff who have outgrown the space and will be moved to the Central Services building in Phase 1. Since the existing cottages will be demolished, the Interpreters will be relocated to the vacated ERCOD building.

Deaf Smith Center
The translators and family services staff currently do not have enough space. Therefore the Deaf Smith Center will be repurposed for them. The Student Center will be relocated from the Deaf Smith Building to the new Student Center Building.

Seeger Gymnasium
The campus lacks space and locker rooms to house all TSD athletic and after school programs. Therefore, an indoor multipurpose/athletic space and four lockers rooms will be added to the building.

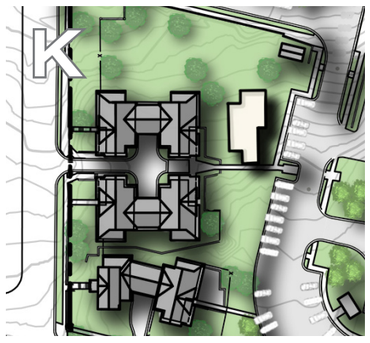


Outdoor Athletic and PE Facility Upgrades
The backstop, dugouts and batting cages at the baseball/softball practice facility will be upgraded for safety and functionality. Synthetic turf will be installed at the football field to allow more multipurpose use. The existing six-lane track will be expanded to eight lanes to accommodate track and field meets and more community use.

Pease Building
Relocating administrative activities to the Central Services building in Phase 1 will allow the Pease building to be repurposed to a flexible Career and Technology lab. Information Technology space will remain in its current location.

Student Center
The Student Center will be relocated from Deaf Smith to the new Student Center. Students' after school activities will be housed in the Student Center, as well as distance learning space.

Transitional Housing
Due to the forecasted enrollment growth of transitional students, to be consistent with the campus zoning plan and to the growing transitional student population, a two-story housing unit will be added next to other existing transitional housing on campus.



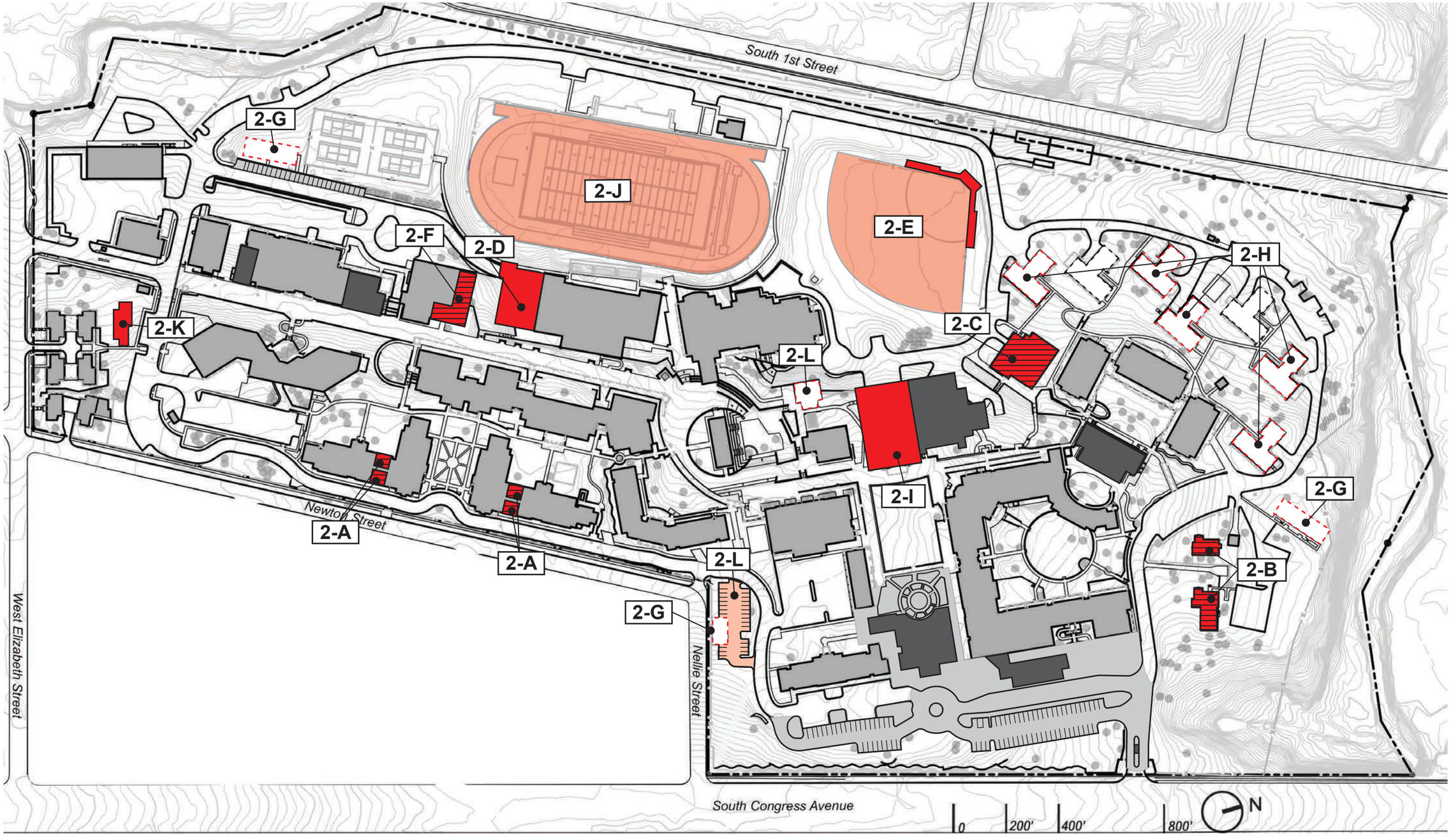
Note: Solid color denotes new construction. Solid color with hatching denotes renovation and repurposing of existing buildings. Dashed outlines denote demolition of existing structures. Finally, half-tone shading denotes site improvements.

Phase 2

- **2-A** Repurpose portions of dorms to create learning kitchens
- **2-B** Move Interpreters from cottage to ERCOD/Toddler Buildings
- **2-C** Repurpose Deaf Smith Building to family services and translators
- **2-D** New Seeger multipurpose workout room and locker addition
- **2-E** Upgrade baseball/softball practice facility
- **2-F** Expand CTE to north end of Pease Building `and create Tech lab
- **2-G** Remove portables
- **2-H** Demolish cottages, old boiler plant, and site restoration
- **2-I** New Student Center, flex learning space
- **2-J** Stadium upgrades (synthetic turf, track upgrade)
- **2-K** Locate Transitional housing at south end and add two units
- **2-L** Site Improvements (landscaping, sustainability, fencing, Building Control Network)

***This list does not include abatement and demolition projects*

Phase 2 Work Plan n.t.s.



Phase 3

Elementary/Middle School/ High School

Relocate administrative and mainstream special program rooms to create additional classrooms for the growing student population.

Existing Transition Housing

Due to the needs of transitional students, Phase 2 created new transitional housing at the south end of campus by the other transitional housing and transitional classrooms. The vacated dorm at the north end of the campus will be repurposed to a special needs dorm.

High School Commons

Students that live on campus do not have anywhere to socialize, do homework, or have access to after-hours computer labs. High School Commons will be located between Koen and Lewis Dorms to serve as daytime and after-hours learning and socialization space.

Middle School and High School Addition

Due to the growing population of the Middle School/High School, the addition will create new space to house long-term educational space needs.

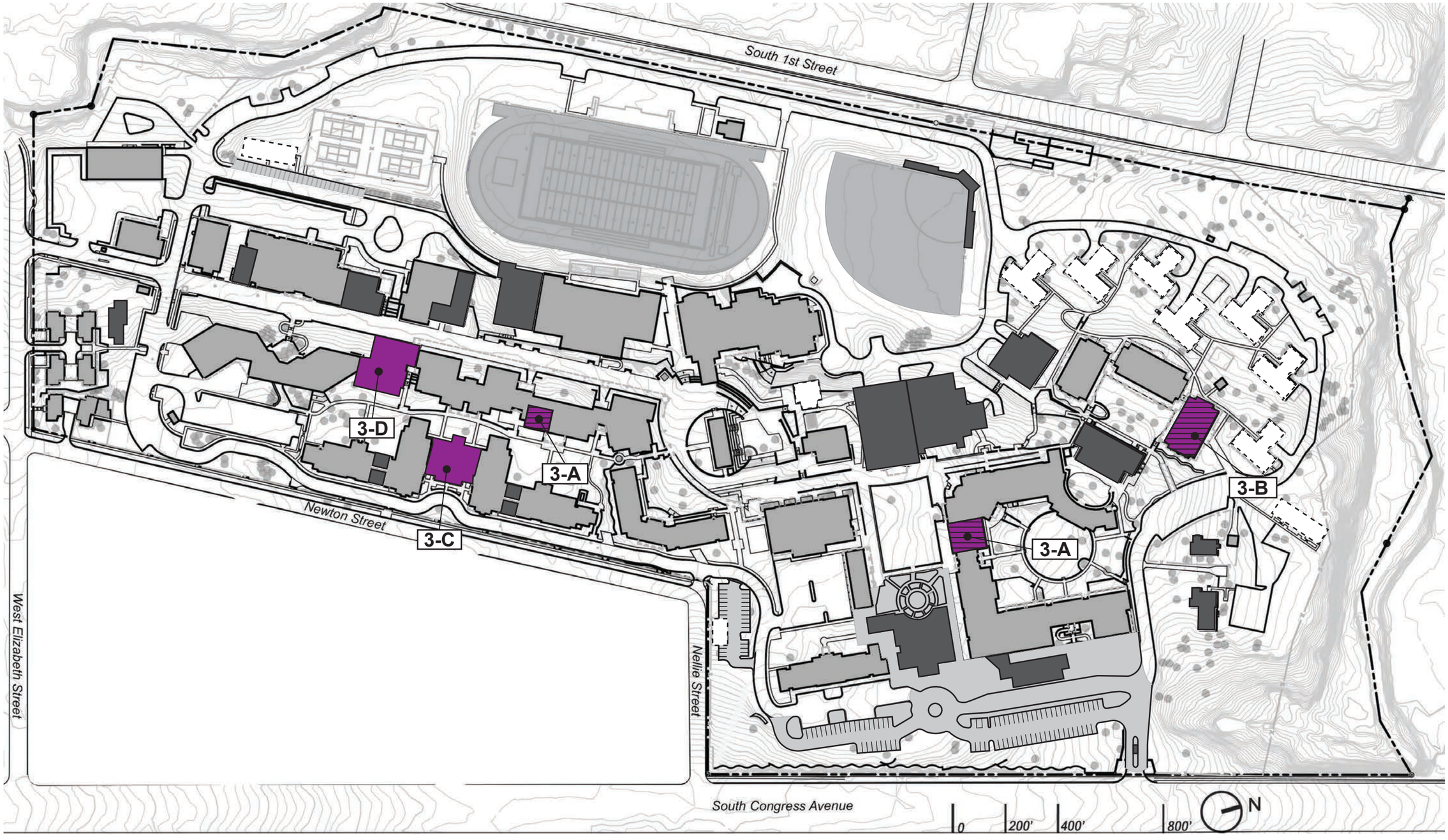
Note: Solid color denotes new construction. Solid color with hatching denotes renovation and repurposing of existing buildings. Dashed outlines denote demolition of existing structures.

Phase 3

- **3-A** Repurpose ES/MS/HS admin space to academic use
- **3-B** Repurpose existing Transitional housing to special needs
- **3-C** New HS commons between Koen and Lewis halls
- **3-D** MS/HS/CTE addition per enrollment change

***This list does not include abatement and demolition projects*

Phase 3 Work Plan n.t.s.



Phase 4

Second Central Plant

An additional central plant will be needed to supplement the current central plant, which will reach capacity in the early phases of the master plan. This central plant will support the Outreach and Applied Research Center and other facilities.

Outreach and Applied Research Center

Deaf students in the state of Texas who do not attend TSD are served by the outreach staff. The building will house the Outreach staff, deaf space and learning research center. Visitor housing will accommodate visiting deaf students, families and visiting researchers.

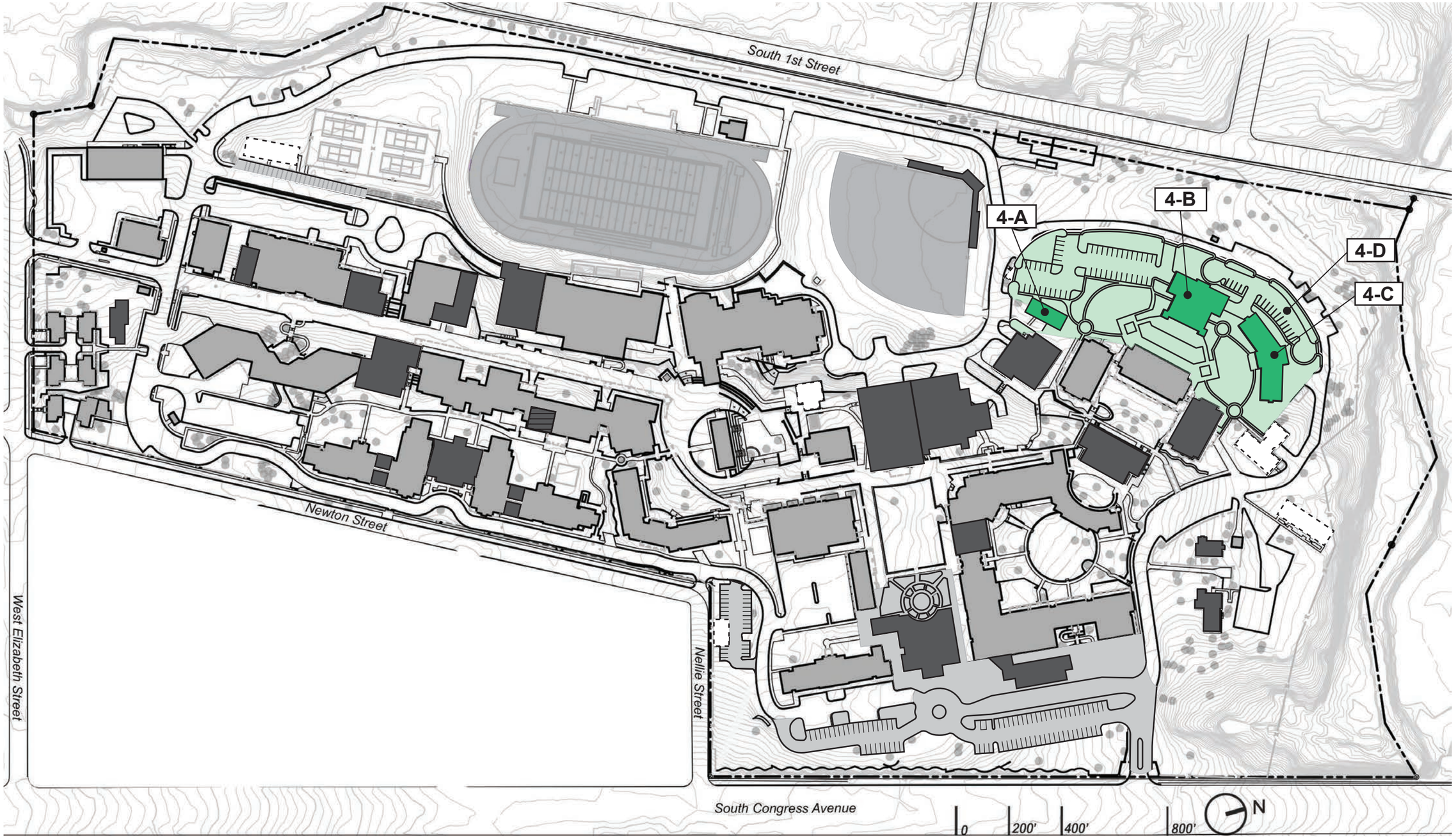
Note: Solid color denotes new construction, and half-tone shading denotes site improvements. Dashed outlines denote demolition of existing structures.

Phase 4

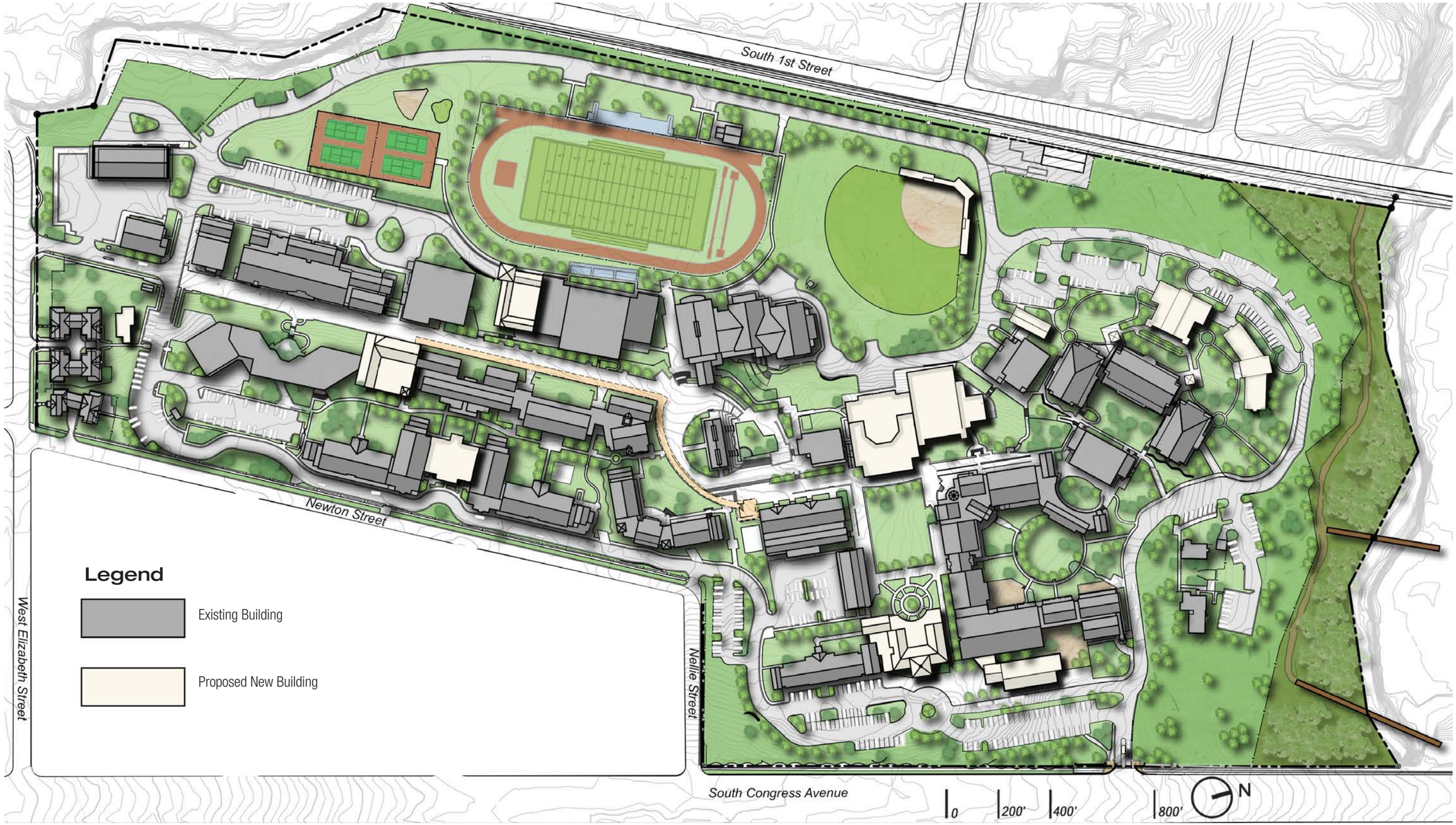
4-A Second central plant
4-B Outreach and applied research center
4-C Outreach and applied research center housing
4-D Site work (electrical feed/IT infrastructure) and parking for outreach and applied research center

***This list does not include abatement and demolition projects*

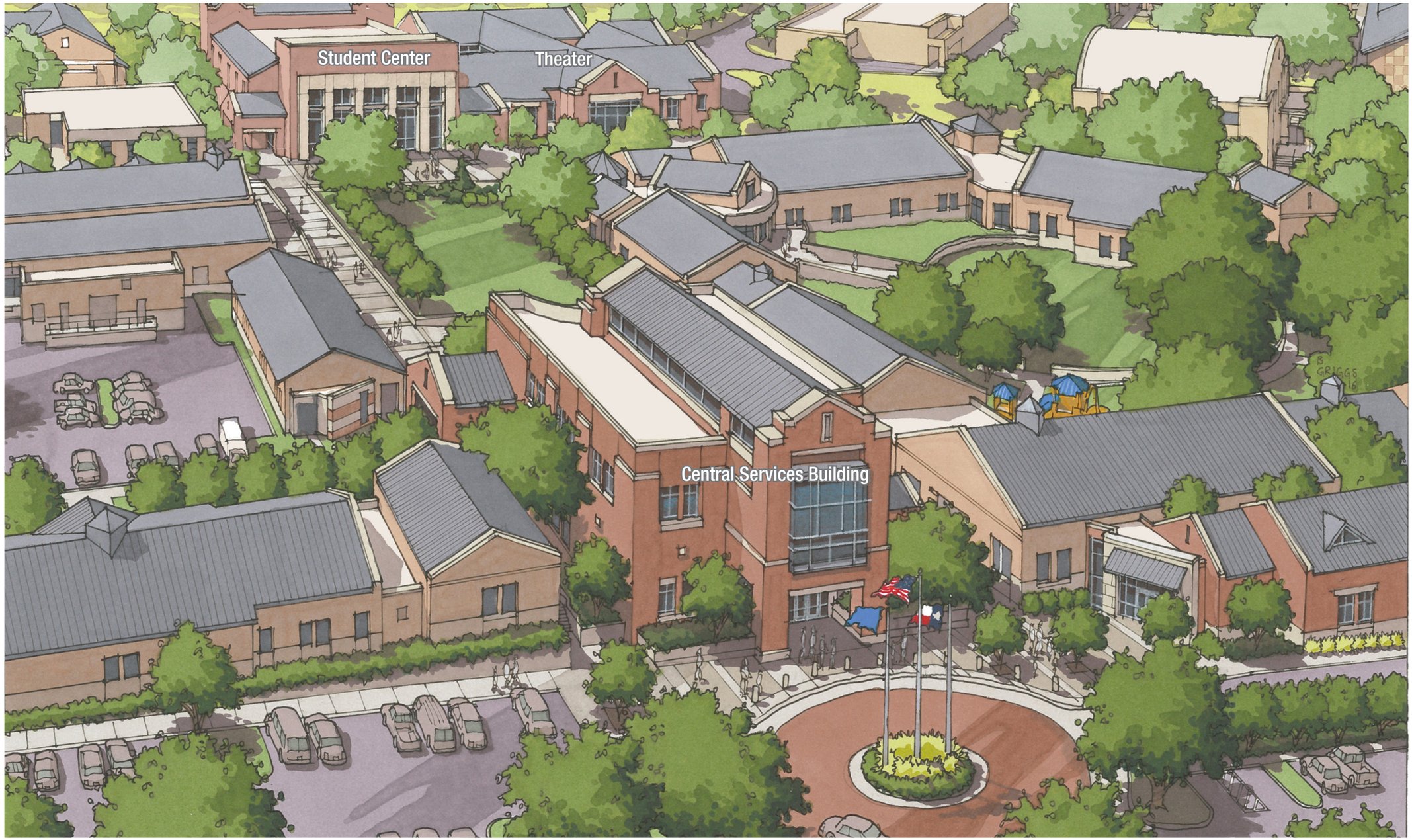
Phase 4 Work Plan n.t.s.



Proposed Campus Master Plan, n.t.s.



View Looking Southwest Overhead of the South Congress Avenue Entrance



View Overhead of New East Parking Area Looking Northwest Towards Central Services

View North Down the South Main Pedestrian Mall

View Looking Northeast Towards Multipurpose Building and Theater

Renewal Optimization

Strategic renewal can reduce long-term cost of ownership, which improves long-term value for building owners, managers and Texas tax payers. Strategies utilized in the master plan to reduce long-term cost of ownership were:

- Renovate or replace economic analysis of older buildings
- Time cycles of renewal
- Space efficiency in conjunction with renewal efforts

The chart to the right compares 30-year cost of ownership of two models. Cost of ownership models include initial construction cost, future renewal, adaptation, interest and maintenance. Renewal and adaptation models are based on a tool developed by the Association of Physical Plant Administrators that has proven reliable in decades of use. This tool has been validated with the statistical analysis of 38 facility assessments by 11 consulting firms. Thirty years was selected to include common bond terms and the first renewal cycle of most building systems/materials. Assumptions for this model were 3 percent bond interest, 5 percent inflation and $6 per square foot for building maintenance.

What Impacts Cost of Ownership

Many focus on initial construction cost as a means to control costs. Initial construction cost represents 10-20 percent of the total cost of ownership. Maintenance, bond interest, energy, life cycles/quality, renewal and adaption represent the other 80-90 percent of total cost of ownership. The goal of cost of ownership optimization is to reduce the long-term total cost. Experience indicates strategic renewal and building space efficiency have the most impact on long-term cost of ownership. Strategic renewal proactively schedules building renewal or replacement to minimize cost of ownership.

Synergy of Renewal and Space Efficiency

The most impact on cost of ownership occurs with the combination of space efficiency and economically favorable replacement. Less space is maintained, and the systems are more efficient. This is the case with the proposed Central Services Building. This facility replaces older portable buildings in less space than currently occupied. The demolition of cottages standing vacant will provide further opportunities for synergy of renewal and space efficiency. This replacement of older inefficient space will reduce long-term deferred maintenance.

The chart below compares the 30-year cost of ownership of two scenarios:

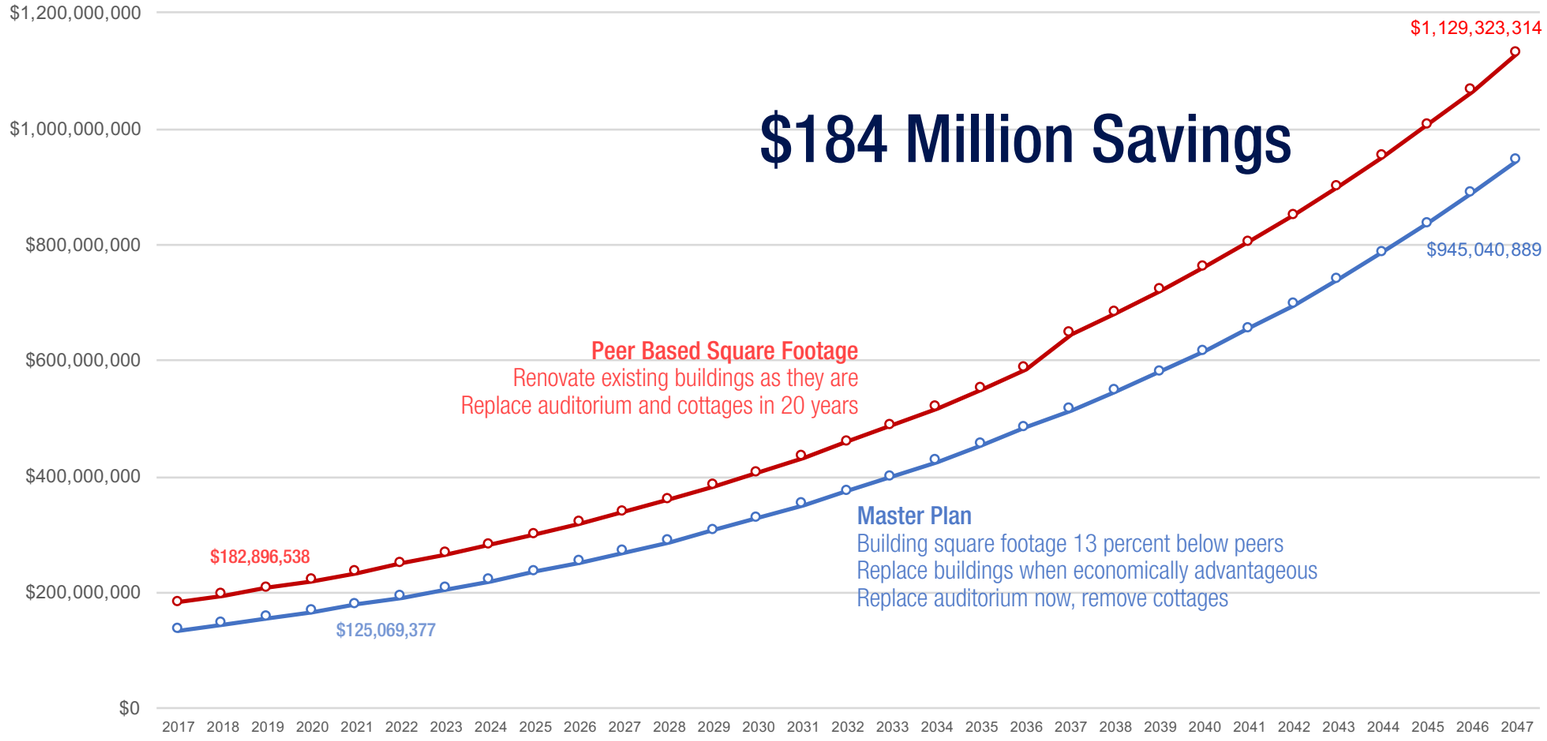
- **Renovation-Peer Model:** Renovating all buildings as they are and adding new building space to match peer schools for the deaf. Then replacing the auditorium and cottages in 20 years when they would be 80 plus years old.
- **Master Plan:** replaces the auditorium and cottages now. Adds new building space but keeps total building square footage below peers.

Intuitive Model

It is helpful to intuitively check cost of ownership models using general guidelines. The chart below further refines this general cost of ownership savings model. This can be done by using the 15 percent for initial cost and the 85 percent for 50-year long-term costs (5.6 x initial cost) noted above. In the chart, the difference in new square footage between the models is 98,400 square feet of new space. Assuming a cost of $450 per square foot, the initial cost of this difference would be $44 million. The 30-year cost (60 percent of total 50-year cost of ownership) would be:

Initial cost difference =	$44 million
Long-term cost after initial $44 million x (5.6 x 60 percent) =	$148 million
Total Delta	$192 million

Cost of Ownership Comparison



Existing Auditorium vs. Flex Theater

The purpose of this analysis is to compare the initial and long-term cost of renovating vs replacing the auditorium.

This option includes renovating the existing auditorium and adding a flex meeting/black box space, restrooms, dressing rooms, stage storage, lobby expansion and associated corridor space.

New Flex Theater

This option includes replacing the existing auditorium with a 900 seat flex theater similar to Austin City Limits (ACL) Moody Theater in Austin, Texas. The floor space in front of the stage would serve as a flex space for concerts, theater productions, banquets and meetings. The seating on the first level is moveable similar the ACL Moody Theater. The seating in the balcony is fixed.

This design features two stage areas. The traditional stage behind the proscenium can be used for theater productions and more. The stage in front of the proscenium can be expanded with a stage lift system or utilized for an orchestra pit. This accommodates concerts and other events without displacing theater sets.

Deaf Space Design

The current auditorium has two deaf space design deficiencies. The first is head-on seating. The proposed flex theater has U-shaped seating to allow attendees to see each other. Second, it can be difficult to read signing from the back half of the existing auditorium due to the distance. The seating in the proposed flex theater is closer to the stage.

Cost of Ownership Modeling

The cost of ownership was modeled for 30 years. The cost of ownership includes construction, renewal, adaptation, interest and maintenance. Renewal and adaptation models are based on a tool developed by the Association of Physical Plant Administrators that has proven reliable in decades of use. This tool has been validated with the statistical analysis of 38 facility assessments by 11 consulting firms. Thirty years was selected to include common bond terms and to include the first renewal cycle of most building systems/ materials. Assumptions for this model were 3.5 percent bond interest, 4 percent inflation and $6 per square foot for building maintenance.

The major long-term difference in the two scenarios is the cost associated with the ongoing renewal and operating inefficiency of a 50 plus year old building, and the replacement of the existing building when it reaches 80 years of age.

Conceptual Intent

The purpose of the conceptual scope, site plan and estimate is to provide a tool for making a renovate or replace decision. These are preliminary concepts and will need refinement with additional stakeholder input.

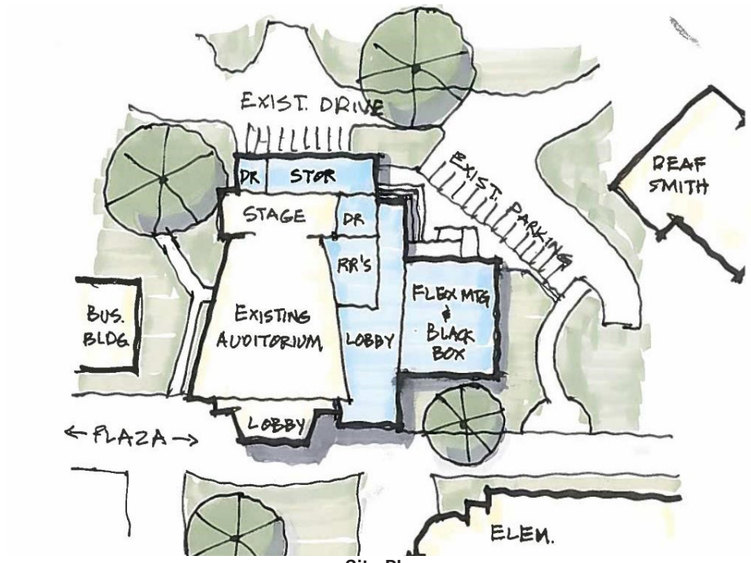
Renovate Existing Auditorium and Addition

Scope

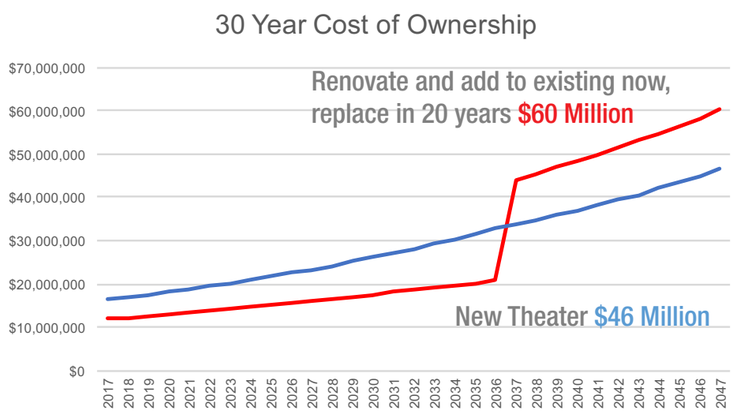
Renovate existing, add black box theater, add meeting space, restrooms, dressing rooms, stage storage, lobby, corridors, ramps, walls — 14,300 square feet

Cost Estimate
$11,479,332

Total Project Budget
$13,545,612
(In 2016 dollars)



Site Plan



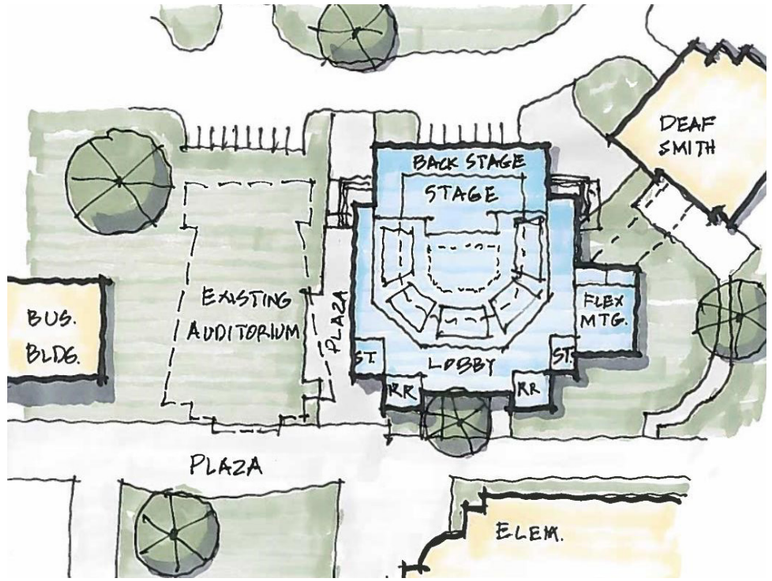
New Flex Theater

Scope

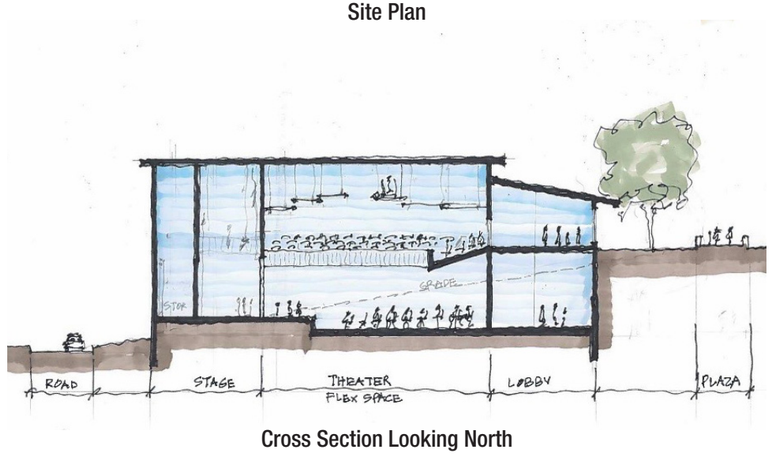
Demo auditorium/site restoration
MP room/theater, restrooms, dressing rooms, stage storage, lobby, corridors, ramps, walls — 27,200 square feet

Cost Estimate
$15,737,100

Total Project Budget
$18,569,778
(In 2016 dollars)



Site Plan



Cross Section Looking North

Existing Cottage Repurposing

The purpose of this analysis is to compare the initial and long-term cost of repurposing of an existing cottage to a new use, in this case for toddlers. These scenarios are based on the assumption of one-class-one-day occupancy. If the program changed to separate morning and afternoon sessions, the capacity would double. This analysis is for building construction only and does not include site features such as roads, parking and play areas.

Renovate Existing Cottage

This option includes renovating an existing cottage to a facility to house the toddler program. This model would accommodate current enrollment, but not future enrollment if current trends continue. It would require repurposing two cottages to accommodate future enrollment if trends continue.

New Toddler Facility

This option includes six activity centers that will accommodate enrollment if current enrollment trend continues. It also includes more storage, additional restrooms and a staff area.

Cost of Ownership Modeling

The cost of ownership was modeled for 30 years. The cost of ownership includes construction, renewal, adaptation, interest and maintenance. Renewal and adaptation models are based on a tool developed by the Association of Physical Plant Administrators that has proven reliable in decades of use. This tool has been validated with the statistical analysis of 38 facility assessments by 11 consulting firms. Thirty years was selected to include common bond terms and to include the first renewal cycle of most building systems/ materials. Assumptions for this model were 3.5 percent bond interest, 4 percent inflation and $6 per square foot for building maintenance.

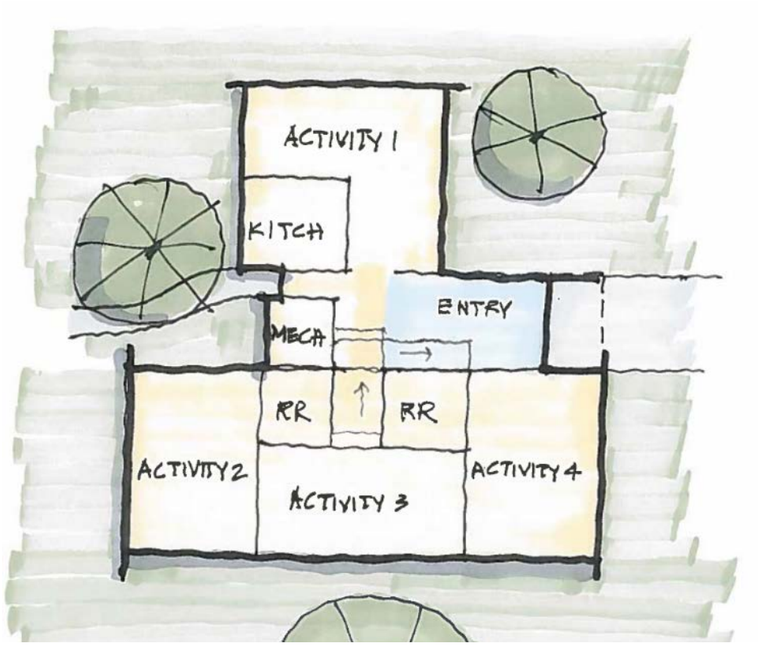
The model assumes the existing cottages will be replaced in 30 years when they are more than 80 years old.

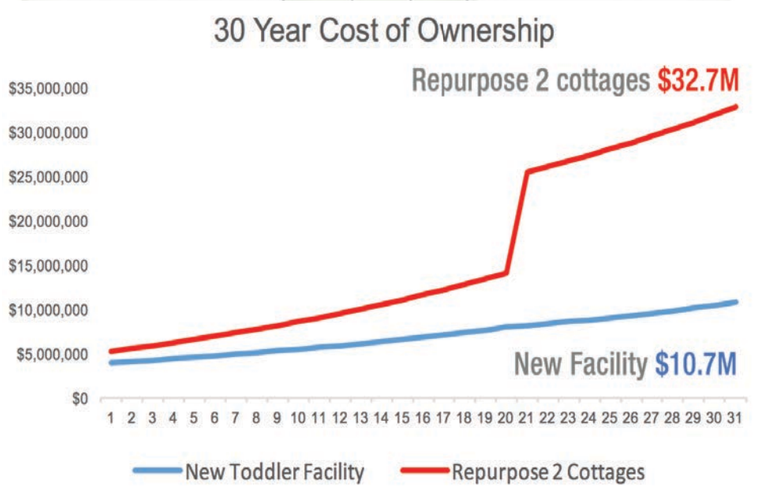
Conceptual Intent

The purpose of the conceptual scope, site plan and estimate is to provide a tool for making a renovate or replace decision. These are preliminary concepts and will need refinement with additional stakeholder input.

Repurpose Existing Cottage to Toddlers

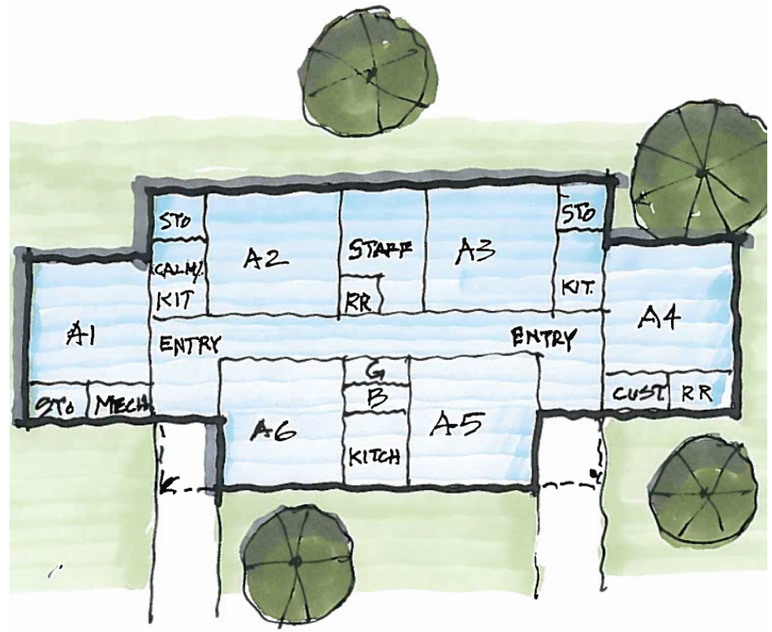
Scope		Cost Estimate
Convert two cottages to toddler center (Six activity centers)	9,250 square feet	**$4,922,665**





New Toddler Facility

Scope		Cost Estimate
New toddler center (Six activity centers)	7,800 square feet	$3,543,540
Demo two cottages and restore site		$207,680
Total		**$3,751,220**



Renewal Cycle Optimization

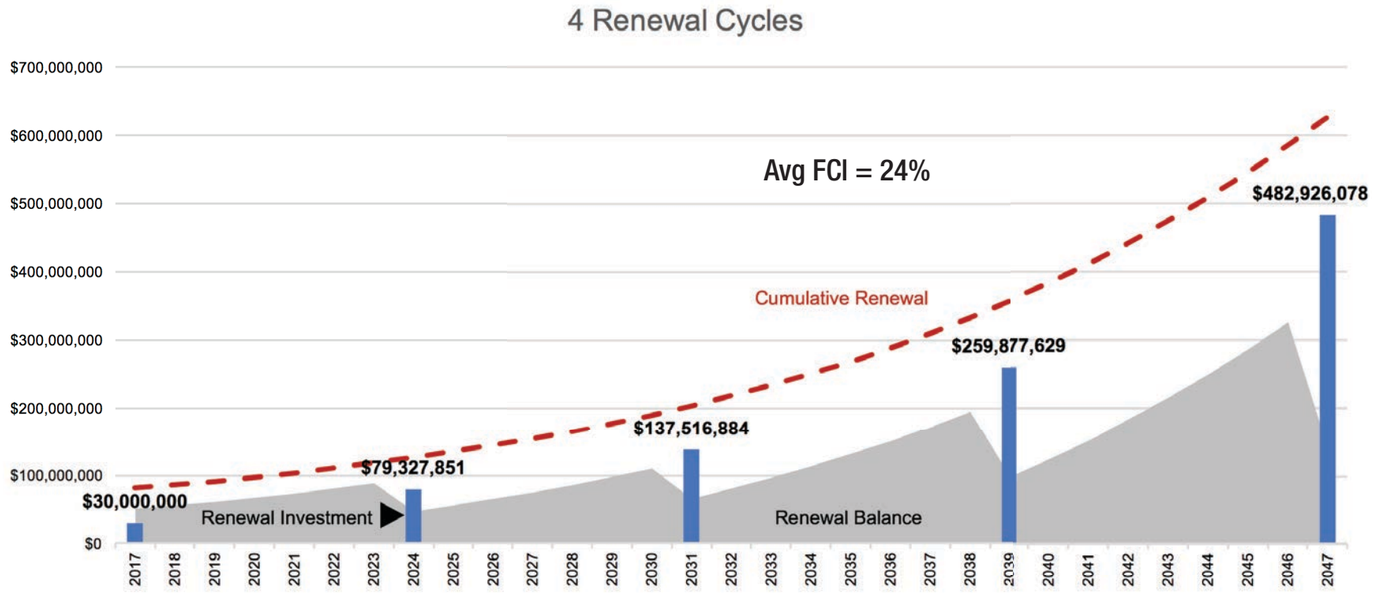
These charts compare how renewal cycles compare for TSD facilities. The intent is to demonstrate the impact of renewal scheduling and provide an informed decision making tool. The renewal investment (blue bars) includes estimated renewal (deferred maintenance) and adaptation investment necessary to bring the campus-wide facility condition index (FCI) down to 15 percent for each cycle.

Renewal and adaptation models are based on a tool developed by the Association of Physical Plant Administrators that has proven reliable in decades of use. PSC has validated this tool with the statistical analysis of 38 facility assessments by 11 consulting firms. 30 years was selected to include common bond terms and the first renewal cycle of most building systems/materials. These models were based on 5 percent inflation, 20 year debt term and 3.5 percent interest rate.

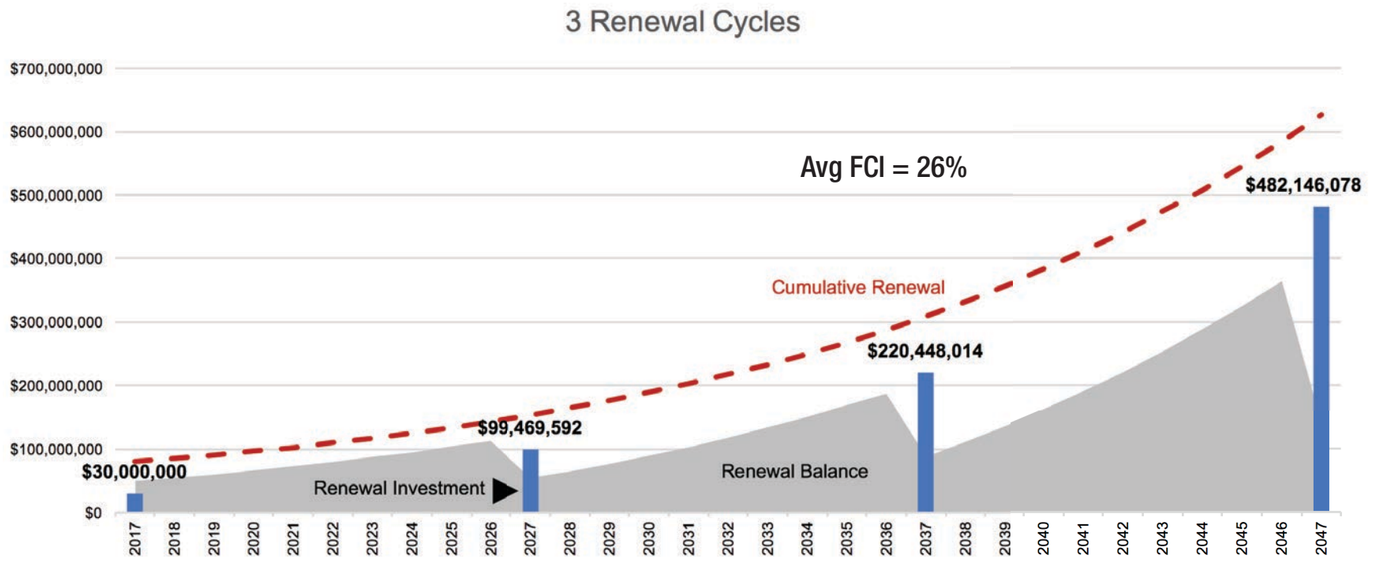
The top chart models the cost of ownership for a renewal investment every 7 years to bring the facility condition index (FCI) down to 15 percent in each cycle. The total renewal cost is the summary of the renewal investment every 7 years (blue bars). The resulting average FCI of this model is 24 percent

The bottom chart models the cost of ownership for a renewal investment every 10 years to bring the facility condition index (FCI) down to 15 percent in each cycle. The total renewal cost is the summary of the renewal investment every 10 years (blue bars). The resulting average FCI of this model is 26 percent.

This model may seem counterintuitive, in that deferring renewal from every 7 years to every 10 years results in less total cost. This is explained by the 10 year cycle model resulting in an average FCI of 26 percent vs an FCI of 24 percent for the 7 year model. Thus, the 10 year model carries a slightly larger renewal backlog over time than the 7 year model.



$157M delta



DESIGN GUIDELINES

Design Guidelines

Architectural Design Guidelines

Overview

Twenty-five years into the third era of campus architecture at the Texas School of the Deaf, the following architectural and aesthetic design guidelines have been prepared at a time in which TSD has grown comfortably into its relationship with the present-day architectural context of its campus. Architectural snapshots remain today of TSD's Victorian, neoclassical and modernist eras, captured in the form of a handful of buildings of each period that remain within the campus. Much of TSD's architectural heritage can be found as "vernacular ghosts" woven into the formative and aesthetic vocabulary of those buildings constructed at TSD since 1990. Though much of the original built heritage of the School has been torn down over time, much remains today to draw upon in the efforts to add in a respectful and cohesive manner to the collection of buildings and site work at TSD.

The master plan endeavors to develop guidelines that are better defined as a "composition of heritage" in which design professionals engaged in future projects at TSD may draw upon in developing formative, aesthetic, materialistic, and bioclimatic solutions to their work. TSD's architectural fabric is a loosely-related mix of forms and colors, with only a handful of overarching elements interconnecting them all into an institutional rhythm. Given the high building density of the campus, adherence to the architectural design guidelines of the master plan is more of an exercise in understanding the aesthetic heritage of nearby buildings than anything else. This quality can already be seen in the existing campus, as postmodern buildings constructed since 1990 were designed to integrate subtly to adjacent existing facilities through the use of different brick color and connecting building forms. Future buildings at TSD must similarly be adapted to merge future styles and building technologies to their surrounding fabric.

The expansions and developments in the 1990s and early 2000s greatly improved the quality of learning and living on campus. However, those design strategies did not account for deaf-friendly design strategies that have only recently been developed and understood. The master plan outlines a range of strategies that should be considered when converting or designing a space.

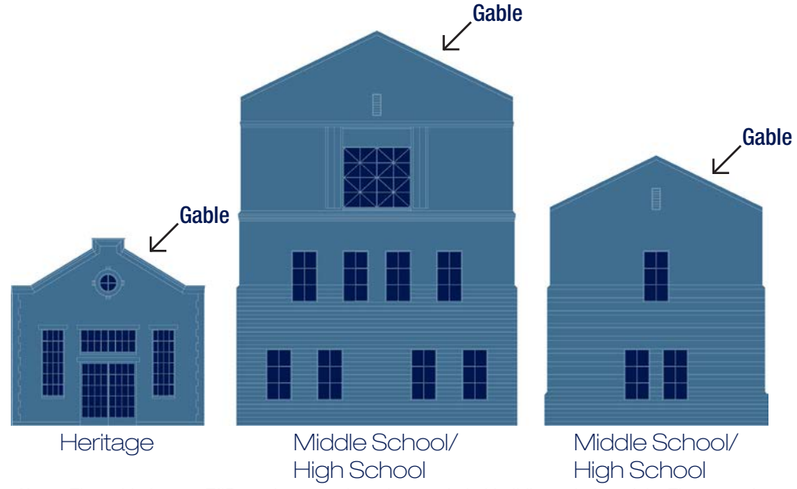
Sources utilized in understanding deaf space strategies include surveys and interviews with faculty, students and alumni as well as meeting with staff at Gallandet University in Washington D. C.

As a result, the following design guidelines are presented in a 'palette' form of delivery, so as not to stifle the opportunity to add future richness in form and diversity to the TSD campus, but rather provide avenues for the same unique designs and subtle historical references made in the expansions of the 1990s and 2000s. The following section overviews traditional building forms, vertical and roof fabric, bioclimatics, and building recommendations at both the human and empirical scale, in anticipation that these guidelines will shape decades of further architectural expansion at an Austin and statewide campus landmark.

Key General Guidelines for TSD Facility Design

The following points represent general recommendations based upon the architectural fabric of the TSD Campus, as well as best design practices in 'Deaf Space' design, and bioclimatic recommendations for this campus and the Austin area. They include the following:

Massing — When possible buildings should be defined by the gable or capped gable form. Hipped roofs are not a part of the vocabulary at TSD.
Height — Though three- and four-story buildings have been constructed at TSD in the last 25 years, these spaces have presented challenges to TSD faculty and students alike. Wherever possible, buildings should be limited to no more than two stories in height.
Vertical Fabric — Unit masonry; specifically modular brick, remains today and in the future as the predominant exterior material on campus.
Line-of-Sight — The design of plazas, entries, courtyards, and circulatory site work shall be done so as to minimize visual obstruction and maximize line-of-sight for deaf students, faculty, and visitors.
Eastern and Western Views — Designers shall be cognizant of the prevailing dynamics on both eastern and western sides of campus. The eastern campus requires greater attention to establishing an architectural sense of institution as seen from South Congress Avenue, while the western side of campus requires both built bioclimatic and landscape solutions to soften the built environment and solar impact generated from the west.



Above: The gable form at TSD can be seen above in a myriad of buildings. Left to right: The capped gable of the circa-1925 Heritage Center, two separate formative masses of the Middle School/High School Classroom Building.

Architectural Design Guidelines

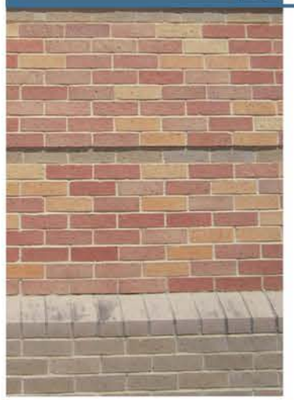
Vertical Building Envelope Palette

The century-and-a-half evolution of the TSD Campus has resulted, unsurprisingly, with a blend of masonry veneers and colors that are as much a reflection of the era each campus facility was built in rather than anything else. Modular brick coursed in a half-length running bond remains the vastly predominant style utilized across campus, finished with standard concave joints. The masonry blends shown here do not constitute 100 percent of the blends seen on campus (for example, the yellow-cream brick used on the Cora Clinger Gymnasium is not shown), and thus subsequent design professionals working at TSD are advised to carefully analyze the existing building vernacular and context in which future work is to be sited. Every effort should be taken to develop tactical design solutions to the building envelope of future work that harmonizes with all existing adjacent construction.

A Old Screen Wall

A throwback to the late 19th century architectural heritage of the TSD Campus, a network of low, square-form seat walls and screen walls define much of the Elementary School mall and nearby outdoor spaces. This style utilizes coarse-cut 'Cordova Cream'-color limestone set in extra-broad mortar joints of an inch or more. This material is not used on building facades, but rather on site work only.

B Trabeated Style



Commonly used on academic and residential buildings in the southeast quadrant of the campus, this style uses cant-faced custom formed brick in the color blend found on the Kleberg Building to create a pronounced water table and reveal running bond belt courses along the facade. The field brick seen is usually some variation of the blend introduced on campus by Fehr & Granger and Gustafson in the 1950s.

C Fehr & Granger Blend

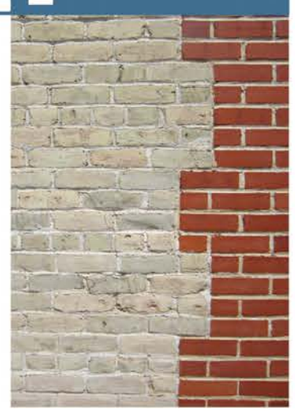
Following their 1954 master plan, the Austin firms of Fehr & Granger and Niggli & Gustafson would design a gamut of modernist facilities at TSD that were the introductory catalyst for a new warmer three-color running bond blend of brick. The color blend is not unlike that seen in the 'Forty-Acres' District of the UT Austin Campus (such as ont the Waggoner and Garrison Halls). The brick is often a smooth finish with an ironspot additive.

D Mixed Blend

Later postmodernist development of the TSD Campus included the incorporation of a darker three- or sometimes four-color blend of running bond brick which incorporates the terra-cotta red accent used in the Heritage Center into the Fehr & Granger brick blend. This blend is prominently seen on the east side of the campus, and is often used in combination with the 'Type G' cream split- and smooth-face CMU as a water table accent.

Heritage Center E

The Heritage Center (former Laundry Building) provides us with a glimpse into the style and color predominant on the TSD campus over a century ago. Firms like Page Brothers and Giesecke & Harris employed a combination of pale gravy-cream running bond brick with every sixth course set as a "locking course" into the substrate; punctuated by terra cotta-red flush quoins at all building corners.



Kleberg Brick F

The austere Kleberg Building set at the southeast end of the campus establishes the use of a faint buff-blend running bond veneer with a smooth finish. Though darker than the blend used at Pease and the Seeger Gym, this color was intended to blend with the veneer of the old 1915 Primary Building formerly connected to Kleberg. As seen in "Type B" above, the color has been used as an accent elsewhere across campus since then.

Split-Face Accent G

Cream-color split-face CMU has been regularly utilized since the 1990s at TSD as both a sitework, screen wall, and water table accent to buildings within the TSD physical plant. More predominantly used on the eastern and northern areas of campus, it is not intended to be used alone as a field veneer, but rather as a complementary accent that harks to the rough ashlar stone seen in "Type A" above. A burnished smooth variant is sometimes used as an accent course.

Pease & Seeger Blend H

Among some of the last of the modernist buildings constructed at TSD, designers in the 1970s opted to abandon the richer colors of the Fehr & Granger brick blend and use a pale-buff running bond brick instead. While more recent construction has drawn from this blend as an accent color, it is limited to a handful of buildings like the Pease Administration and Deaf Smith Buildings.

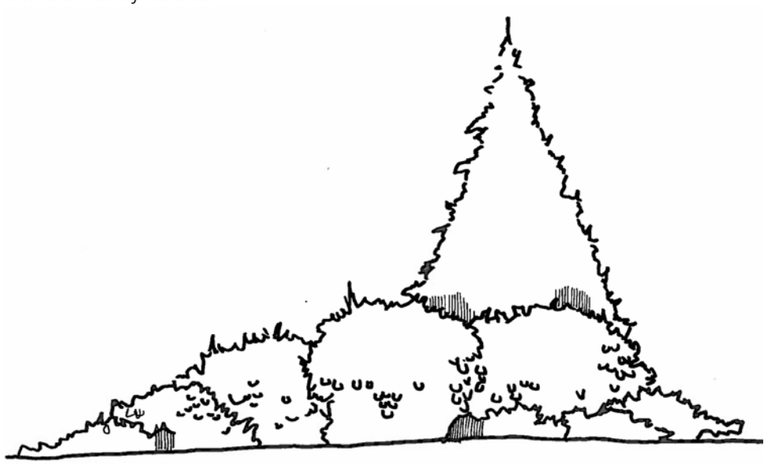
Campus Planting Zones

When working within a specific zone (focus, active, or passive) or the connection between two or more zones, it's important to identify specific elements to help shape the space to a desired outcome. These elements can be described as design components that each designer can use to emphasize certain views, spaces and circulation patterns.

Active Zone — This zone's primary focus is on movement. The scale of movement can vary from macro to micro depending on the user's intent. Long axial movements from one side of the campus to the other along primary corridors are considered a macro scale, while circulation from one adjacent class to another are an example of micro scale. At a macro scale, active zones should identify the central axis and provide a balanced overstory along that axis. At points of interest such as building entries and intersection areas, micro focus zones should be implemented. These areas should be emphasized with scale, color and texture changes. These areas should also incorporate best practices for hard of hearing listed on page H82.

Focus Zone — This zones primary focus is on points of interest. This includes entry points, transition zones and sense of place on a micro, individual user scale. These are achieved by changes in color, texture and arrangement. At a macro scale this is experienced at a vehicular level while driving down South Congress Avenue; the same principles apply but on a larger scale.

Passive Zone — This zone's primary focus is to provide a naturalistic base palette from which to build upon and set parameters and boundaries. This zone is often seen as a backdrop to human activity. While some micro active zones may cut through a passive zone to provide circulation or an intimate gathering space, this zone still remains mostly natural.



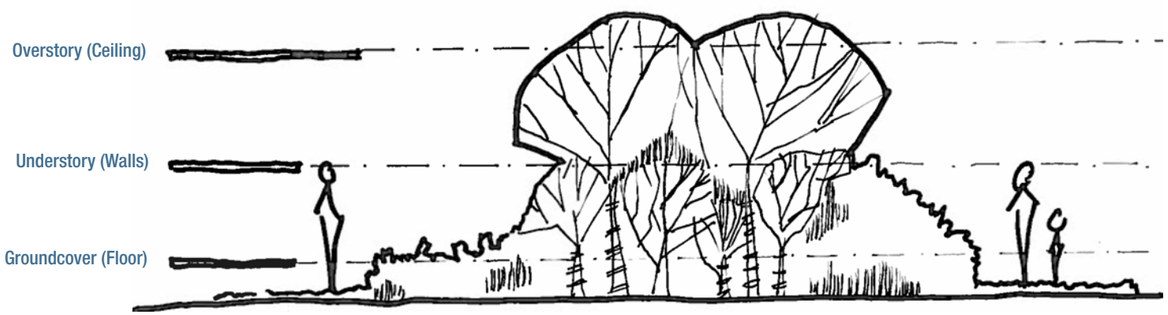
Typical Micro Focus Zone

Elements | The Architectural Forms of Plants

Overstory (Ceiling) — This is usually achieved with canopy trees but can also be achieved with built structures such as pergolas and shade screens. Seven foot height minimum to allow an individual to walk underneath.

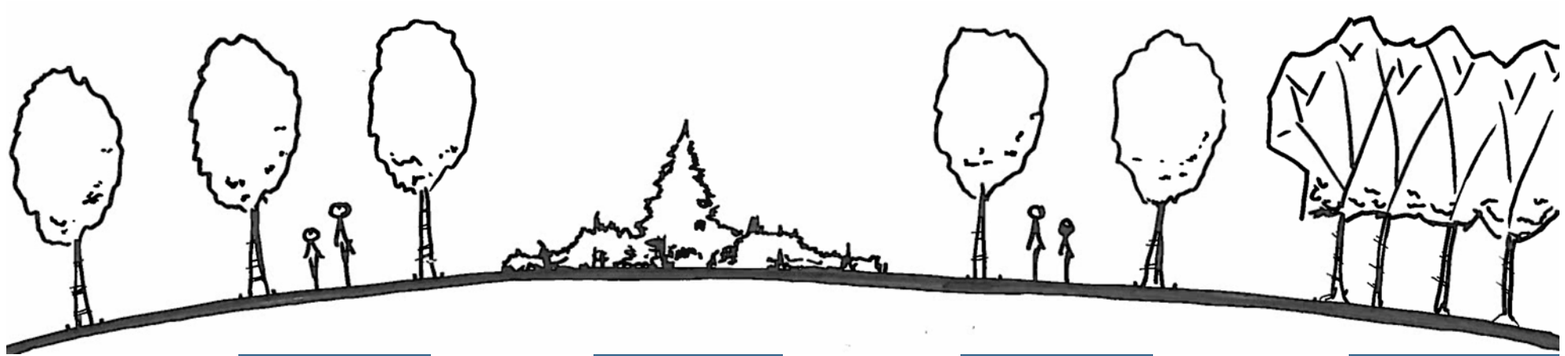
Understory (Walls) — This can encompass a wide variety of plants and materials ranging from 18 inches to 7 feet to achieve the desired enclosure. Examples include: shrub massing, ornamental trees, berming, hedges, retaining walls and other built structures below the canopy line.

Groundcover (Floor) — A planting or mass used as a visual floor, usually below 18 inches. This should be kept below the eye level of the individual within the space.



Architectural Plant Form Diagram

Zone Transition Section Diagram



Specific Plants Elements

Color (General Wash) — Background color to harmonize a general view. It should be uniform, smooth and pleasing to the eye.

Color (Accent) — Used to emphasize certain features of a composition.

Form — The length, width and height of an individual plant and its general shape. General plant forms are: rounded, oval, conical, upright, weeping, spreading or irregular. Vertical forms can be used to create strong accents as well as add height to a composition, while horizontal forms add width to tall structures. Weeping forms create soft lines and connections to the ground plane while rounded forms are useful for creating large plant masses to borders and enclosures.

Texture — The tactile and visual character of the physical surface as determined by the form, size and aggregation of the units of which a plant area is composed. Texture should be considered in terms of comparison between plants in the design and adjacent materials.

Visual Characteristics of Plants

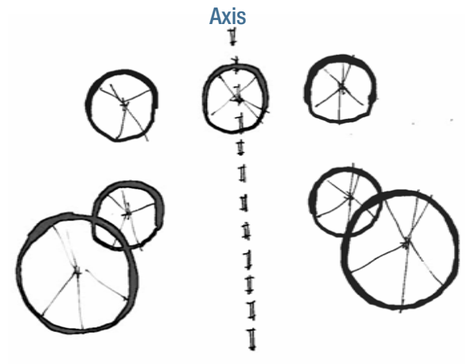
Accent — A visual break is a sequence or pattern of plant material. It has a dramatic effect on the appearance of a planting environment, concentrating attention on a specific portion of the design.

Scale — The relationship of a plant to another plant and to the planted space as a whole. All aspects of the composition must be in scale with its user.

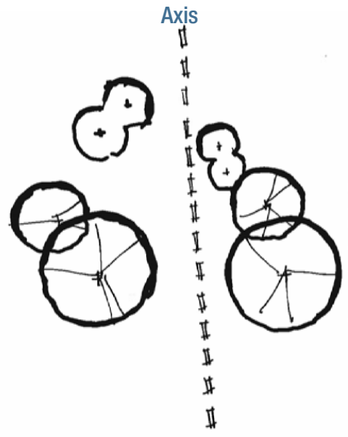
Sequence — The continuity and connection from one element to another. The proper sequence of color or texture will allow a viewer's eye to move within the space in an ordinary fashion and heighten the visual experience.

Balance (Formal) — Repetition of features on each side of the central axis.

Balance (Informal) — Variation of plant type, quantity, or position on either side of the central axis.



Formal Balance Diagram



Informal Balance Diagram

Form Diagrams

ROUND

OVAL

CONICAL

WEEPING

UPRIGHT

HORIZONTAL

IRREGULAR

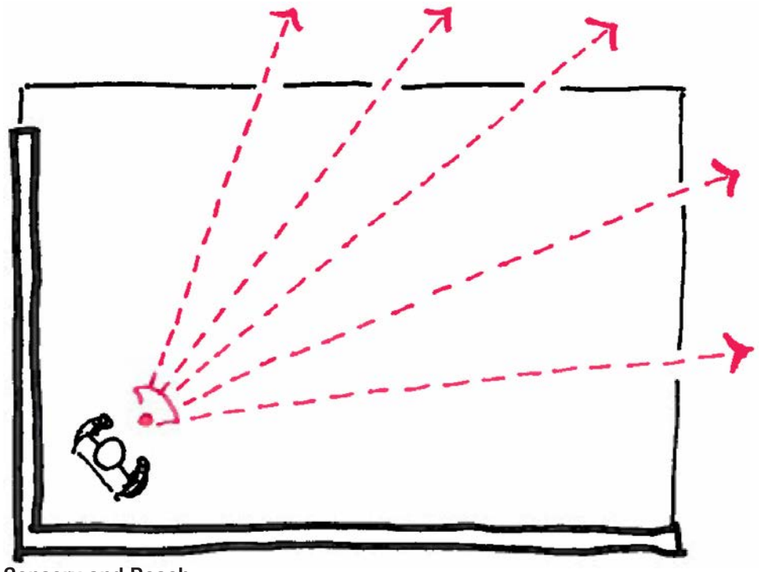
Designing Deaf Spaces

Sensory Reach — Spatial orientation and the awareness of activities within our surroundings are essential to maintaining a sense of well-being. Deaf people "read" the activities in their surroundings that may not be immediately apparent to many hearing people through an acute sensitivity of visual and tactile cues such as the movement of shadows, vibrations, or even the reading of subtle shifts in the expression/position of others around them. Many aspects of the built environment can be designed to facilitate spatial awareness "in 360 degrees" and facilitate orientation and wayfinding.

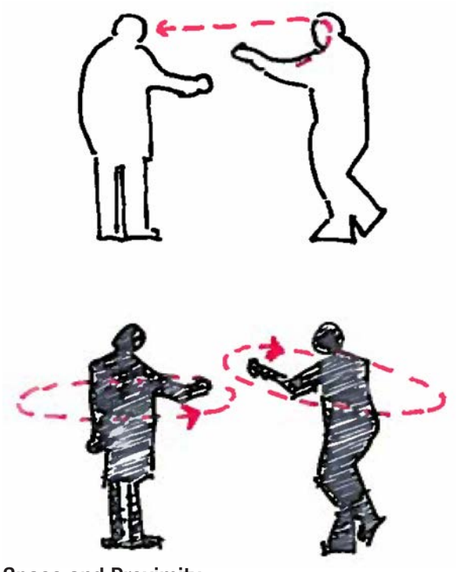
Space and Proximity — In order to maintain clear visual communication individuals stand at a distance where they can see facial expression and full dimension of the signer's "signing space." There space between two signers tends to be greater than that of a spoken conversation. As conversation groups grow in numbers the space between individuals increases to allow visual connection for all parties. This basic dimension of the space between people impacts the basic layout of furnishings and building spaces.

Mobility and Proximity — While walking together in conversation signers will tend to maintain a wide distance for clear visual communication. The signers will also shift their gaze between the conversation and their surroundings scanning for hazards and maintaining proper direction. If one senses the slightest hazard they alert their companion, adjust and continue without interruption. The proper design of circulation and gathering spaces enable singers to move through space uninterrupted.

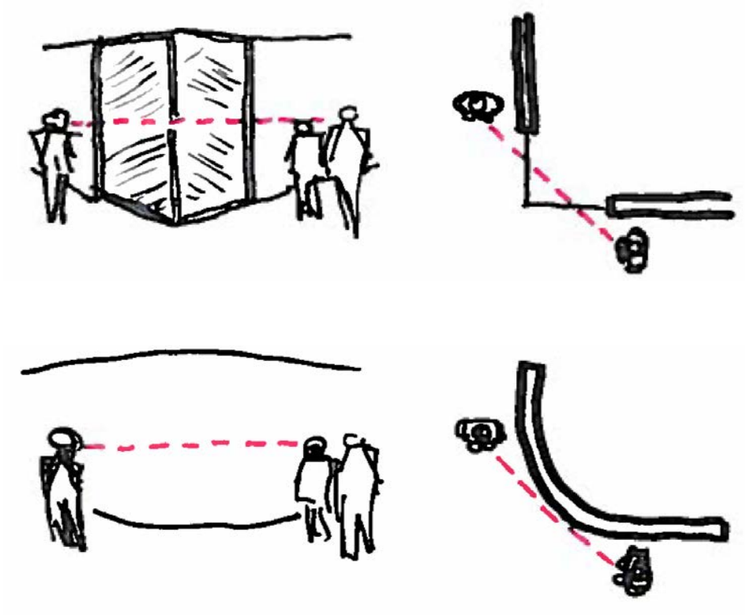
Light and Color — Poor lighting conditions such as glare, shadow patterns, back-lighting interrupt visual communication and are major contributors to the causes of eye fatigue that can lead to a loss of concentration and even physical exhaustion. Proper Electric lighting and architectural elements used to control daylight can be configured to provide a soft, diffused light "attuned to deaf eyes." Color can be used to contrast skin tone to highlight sign language and facilitate visual wayfinding.



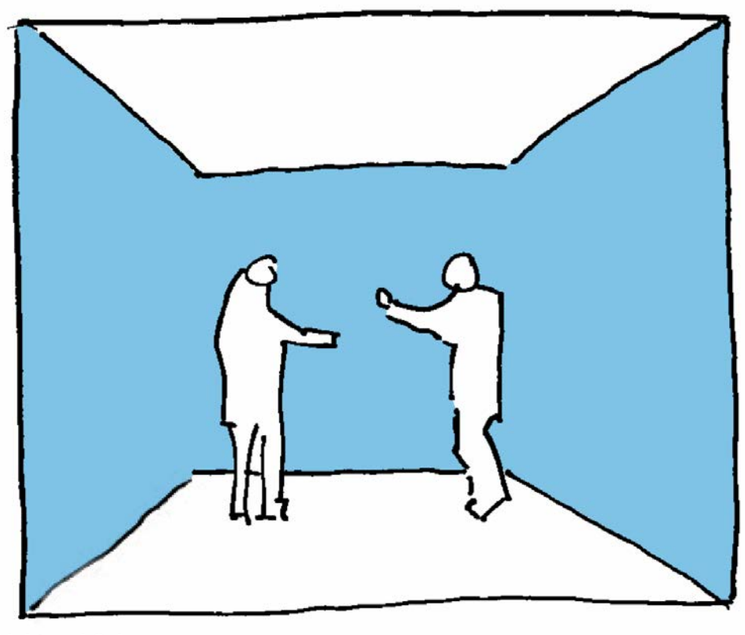
Sensory and Reach



Space and Proximity



Mobility and Proximity



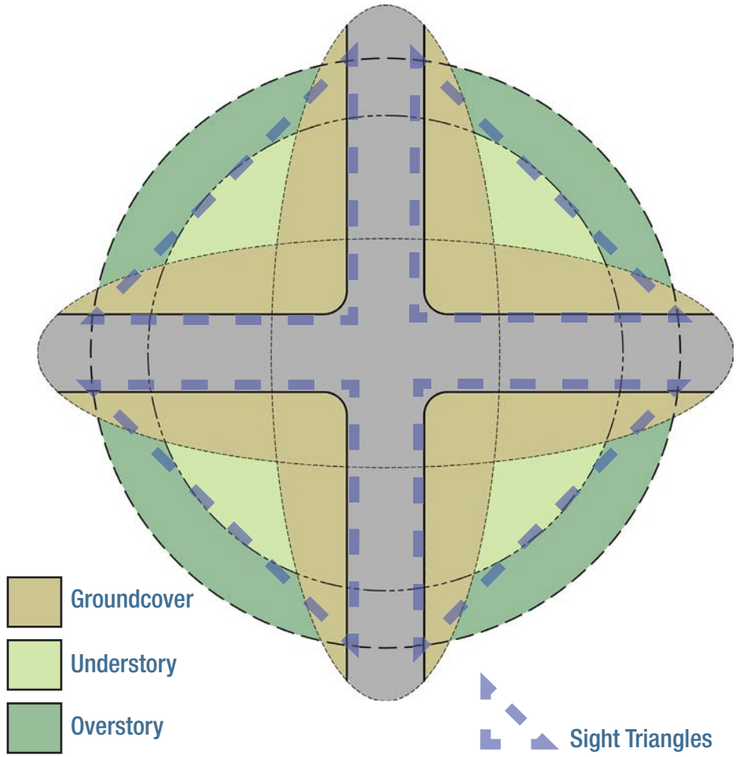
Light and Color

Best Practices Applied

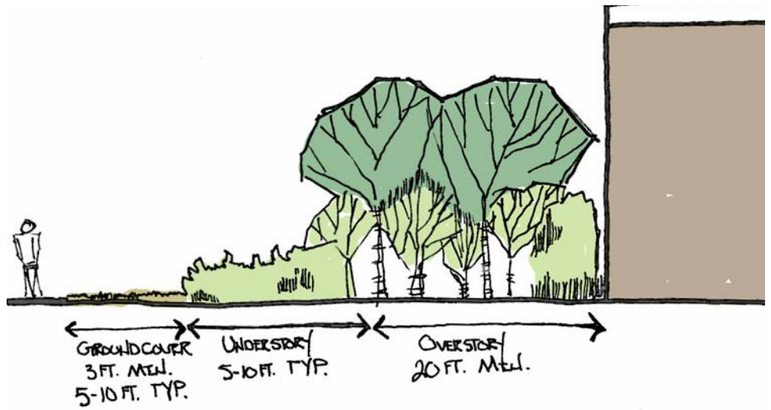
Sight Triangles — The user approaching or departing an intersection should have an unobstructed view of that intersection including sufficient lengths along each path. A typical intersection is divided into areas known as quadrants. There may be three quadrants, such as for a T intersection, or four, such as for a four legged intersection. Sight triangles are the specified areas along an intersections approach legs and across the included corners. These areas should be clear of obstructions that might block a users view. Site triangles can also be used to layout space in section. A clear cone of vision must be maintained between the groundcover and the bottom the overstory trees at all intersections. Reference adjacent diagrams.

Rule of One-Third — For best results, design a mixture of species of about two-thirds deciduous and/or flowering ornamental species and one-third evergreen species. Evergreens provide color and interest during the winter months when deciduous plants have lost their foliage and gone dormant.

Wall Treatment — A predominant architectural feature across the TSD campus are the large concrete and masonry retaining walls. These walls are necessary given the grade changes across campus but have led to large monotone expanses throughout campus. Planting, mosaics, paintings and other wall applications can be used to break up these large expanses and help tie together the landscape. Some plant species are ideal for cascading, those plants should be planted at the top of walls. Another way the break up the spaces is the use greenscreen. This technique allows plants and vines to grow vertically onto a substructure attached to the wall, creating a living wall experience. Site lines should also be considered when planting in front of retaining walls. Plant species that grow beyond the height of the wall can cause security issues for faculty and staff that need to be able to see students. Not all planting beds need to be densely planted at the base of retaining walls, other techniques or applications can be employed. Mosaics and murals often times are used as opportunities for class gifts, way-finding, and/or artistic expression areas. Often times these types of applications become cherished areas and give the user a sense of ownership, a key component to long-term vitality.

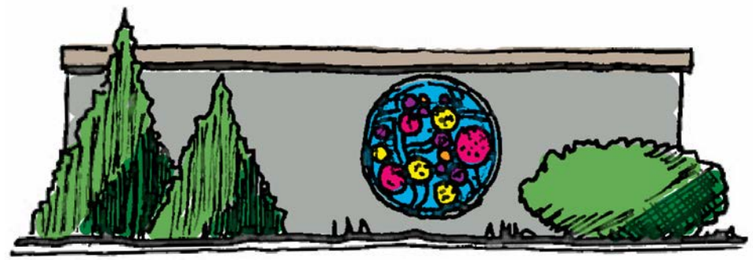


Typical Plantings Zones at a Pedestrian Intersection with Sight Triangles

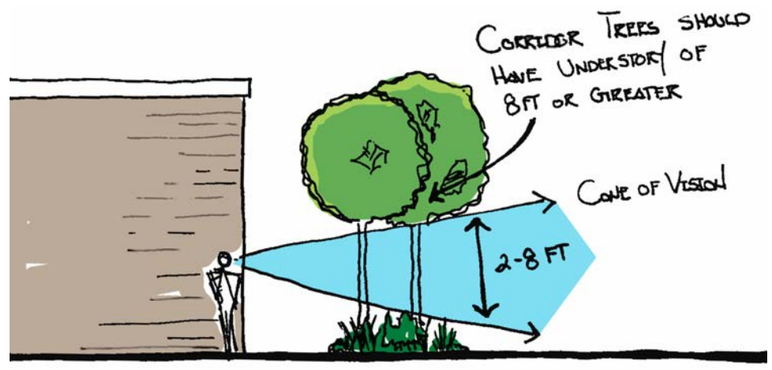


Typical Plantings Zones at a Pedestrian Intersection — Section

Cascading Plant Over Wall


Mosaic/Mural wall

One-Third Rule



Cone of Vision

TYPICAL ACTIVE ZONE PLANT LIST

OVERSTORY	Texas Ash	Fraxinus Texensis
	Arizona Cypress	Cupressus Arizonica
	Cedar Elm	Ulmus Crassifolia
	Bigtooth Maple	Acer Grandidentatum
	Bur Oak	Quercus Macrocarpa
UNDERSTORY	Anacacho Orchid Tree	Bauhinia Lunarioides
	Arroyo Sweetwood	Myrospernum Sousanum
	Yaupon Holly	Ilex decidua
	Huusache	Acacia Farnesiana
	Mexican Redbud	Cercis Canadensis
	Texas Mountain Laurel	Sophora Secundiflora
	Butterfly Bush	Buddleja Marrubiifolia
	Cotoneaster	Cotoneaster Spp.
	Globe Mallow	Sphaeralcea Ambigua
	Knockout Rose	Rosa Knockout
	Texas Sage	Leucophyllum Frutescens
	Bird of Paradise	Caesalpinia Pulcherrima
	Texas Lantana	Lantana Urticoides
	Plumbago	Plumbago Auriculata
	Red Yucca	Hesperaloe Parviflora
	Big Muhly	Muhlenberia Lindheimeri
	Gulf Muhly	Muhlenbergia Capillaris
	Switch Grass	Panicum Virgatum
	Coral Honeysuckle	Lonicera Sempervirens
GROUNDCOVER	Iceplant	Delosperma Spp.
	Leadwort Plumbago	Ceratostigma plumbaginoides
	Liriope	Liriope Muscari
	Mondo Grass	Ophiopogon Japanicus
	Sedum	Sedum Spp.
	Verbena Spp.	
	Buffalo Grass	Buchloe Dactyloides
	Bermuda Hybrids	

TYPICAL FOCUS ZONE PLANT LIST

OVERSTORY	Arizona Cypress	Cupressus Arizonica
	Honey Mesquite	Prosopis Glandulosa
	Bigtooth Maple	Acer Grandidentatum
	Bur Oak	Quercus Macrocarpa
	Texas Red Oak	Quercus Texana
UNDERSTORY	Crape Myrtle	Lagerstroemia Indiaca
	Desert Willow	Chilopsis Linearis
	Yaupon Holly	Ilex decidua
	Huusache	Acacia Farnesiana
	Mexican Redbud	Cercis Canadensis
	Texas Mountain Laurel	Sophora Secundiflora
	Butterfly Bush	Buddleja Marrubiifolia
	Cotoneaster	Cotoneaster Spp.
	Globe Mallow	Sphaeralcea Ambigua
	Knockout Rose	Rosa Knockout
	Texas Sage	Leucophyllum Frutescens
	Bird of Paradise	Caesalpinia Pulcherrima
	Texas Lantana	Lantana Urticoides
	Plumbago	Plumbago Auriculata
	Esperonza	Tecoma Stans
	Fall Aster	Aster Oblongiformis
	Purple Cone Flower	Echinacea Purpurea
GROUNDCOVER	Iceplant	Delosperma Spp.
	Leadwort Plumbago	Ceratostigma plumbaginoides
	Liriope	Liriope Muscari
	Mondo Grass	Ophiopogon Japanicus
	Sedum	Sedum Spp.
	Verbena Spp.	

TYPICAL PASSIVE ZONE PLANT LIST

OVERSTORY	Texas Ash	Fraxinus Texensis
	Bigtooth Maple	Acer Grandidentatum
	Bur Oak	Quercus Macrocarpa
	Southern Live Oak	Quercus Virginiana
	Texas Red oak	Quercus Texana
	Bald Cypress	Taxodium Distichum
UNDERSTORY	Arroyo Sweetwood	Myrospernum Sousanum
	Yaupon Holly	Ilex decidua
	Huusache	Acacia Farnesiana
	Mexican Redbud	Cercis Canadensis
	Texas Mountain Laurel	Sophora Secundiflora
	Butterfly Bush	Buddleja Marrubiifolia
	Cotoneaster	Cotoneaster Spp.
	Plumbago	Plumbago Auriculata
	Sumac Evergreen	Rhus Virens
	Abelia	Abelia grandiflora
	Yarrow	Achillea Spp.
	Indian Hawthorne	Raphiolepis Indica
	Red Yucca	Hesperaloe Parviflora
	Big Muhly	Muhlenberia Lindheimeri
	Gulf Muhly	Muhlenbergia Capillaris
	Switch Grass	Panicum Virgatum
GROUNDCOVER	Horseherb	Calyptocarpus vialis
	Buffalo Grass	Buchloe Dactyloides
	Shortgrass Prairie Seed Mixes	
	Bermuda Hybrids	
	Zoysiagrass	Zoysia Japonica

Proposed Campus Planting Zone Plan n.t.s.

Typical Overstory Deciduous Trees

Texas Red Oak

Texas Ash

Lacebark Elm

Cedar Elm

Bigtooth Maple

Typical Overstory Evergreen Trees

Afghan Pine

Austrian Pine

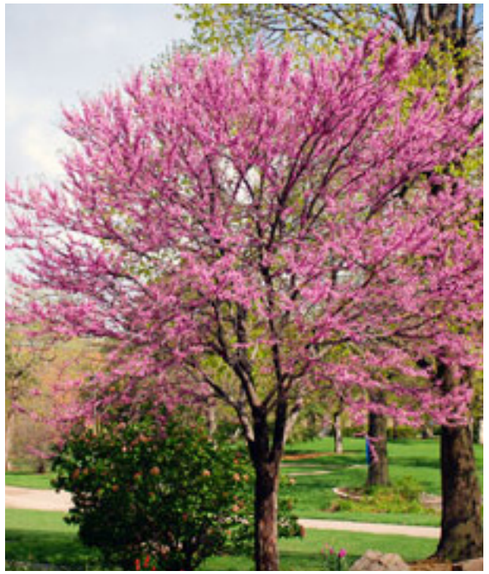
Pinyon Pine

Arizona Cypress

Typical Understory Flowering Trees

Texas Mesquite

Vitex



Texas Redbud

Desert Willow

Typical Understory Shrubs

Artemisia

Lantana

Rock Rose

Agustache

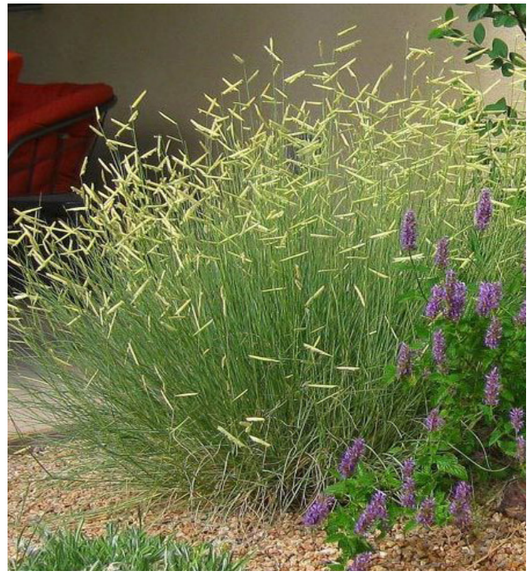
Purple Cone Flower

Typical Understory Ornamental Grasses

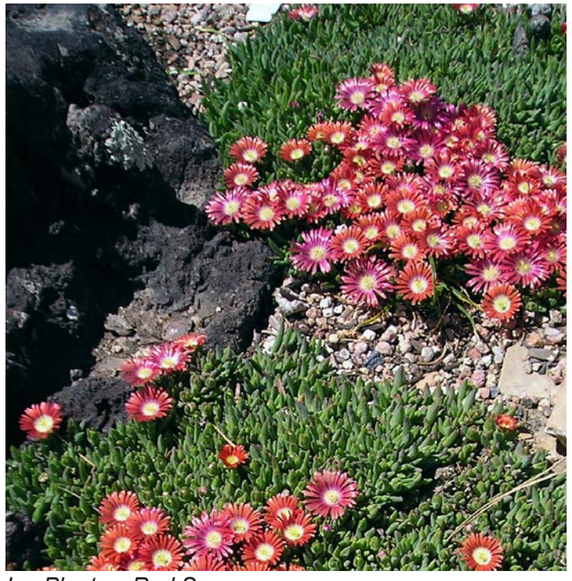
Feather Reed Grass

Mexican Feather Grass

Sideoats Grama

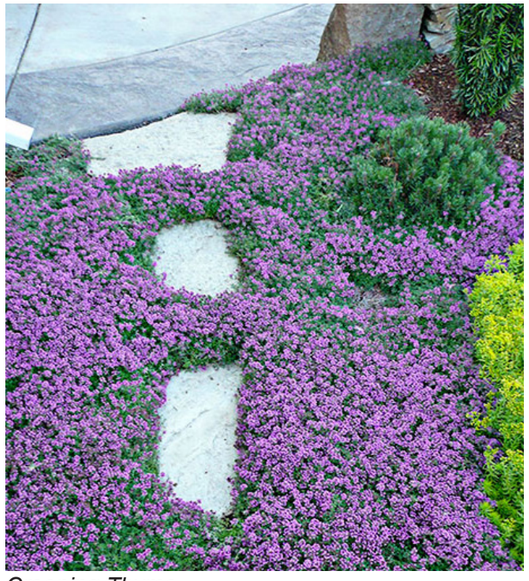

Blonde Ambition

Typical Groundcovers

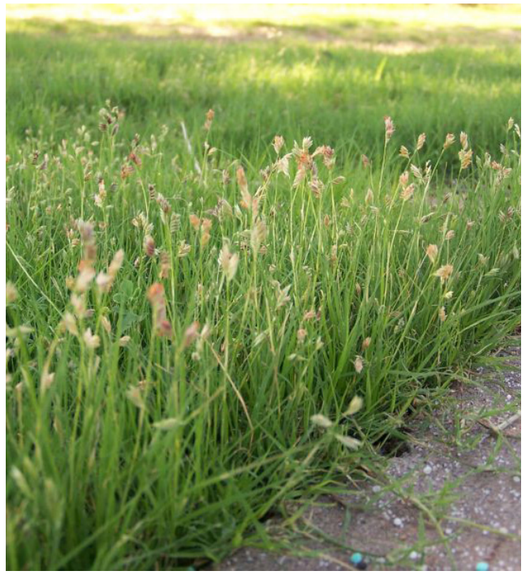

Ice Plant — Red Sp.

Ice Plant — Yellow Sp.

Gopher Plant


Creeping Thyme

Typical Native Turf Grass



Buffalo Grass

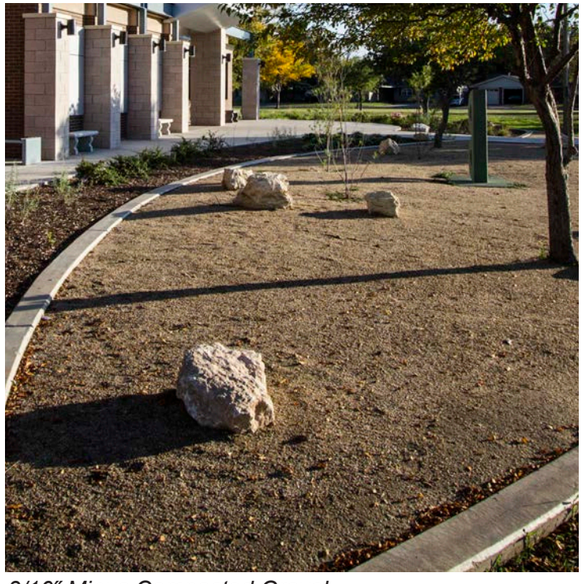
Blue Grama

Sun Turf — Native American Seed

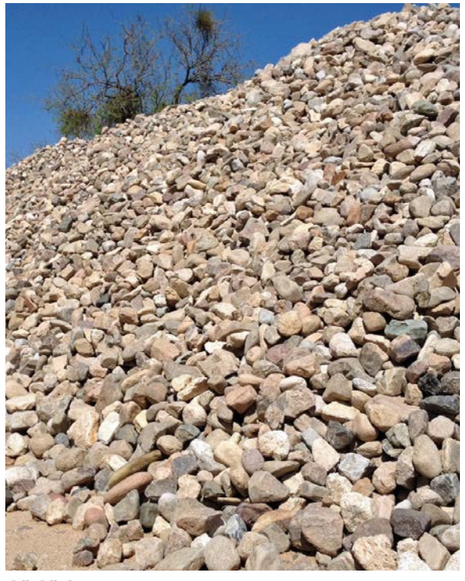
Turffalo — Tech Turf/Shadow Turf

Typical Non-Living/ Bedding Materials

Wood Mulch



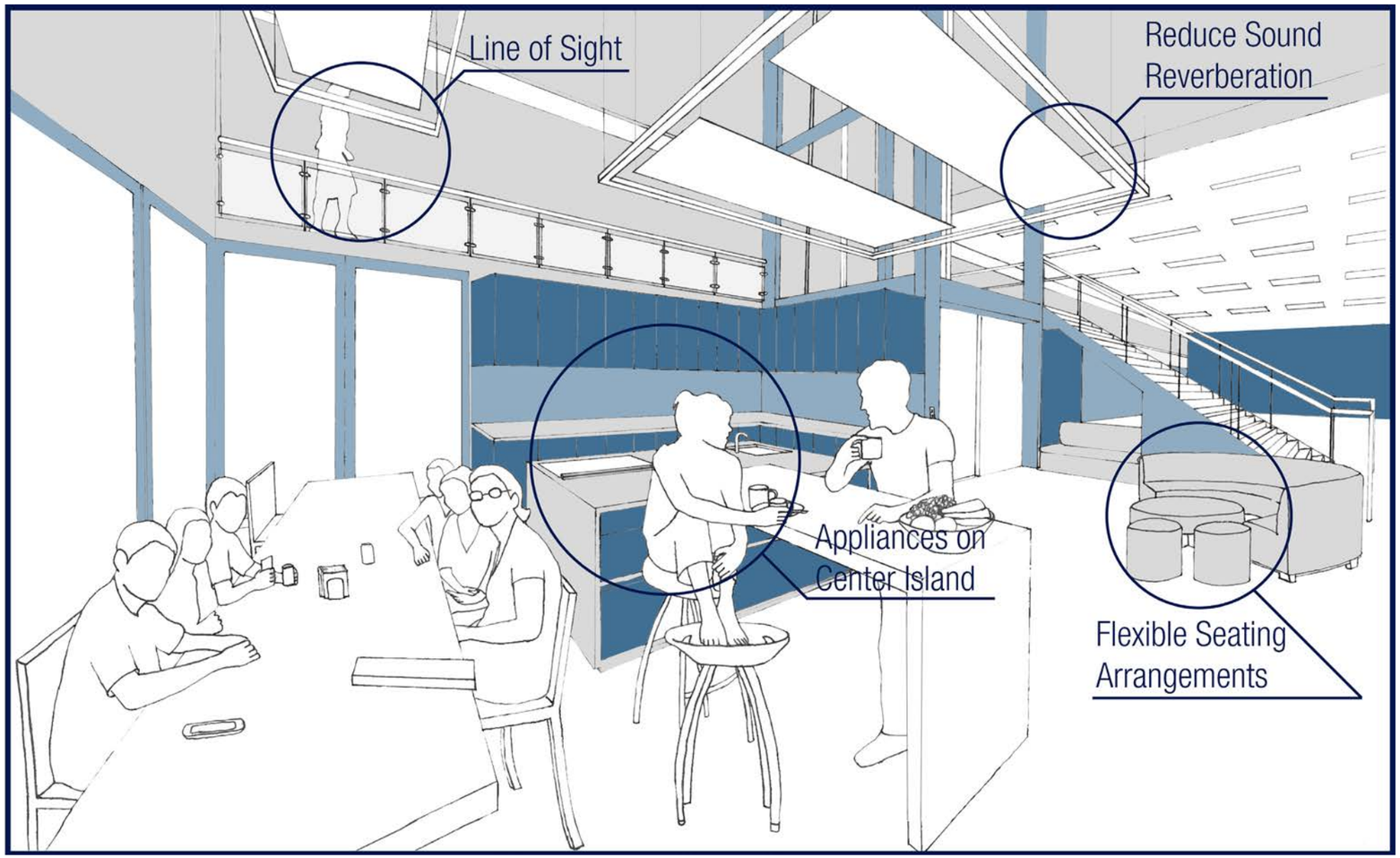
3/16˝ Minus Compacted Gravel



3˝-6˝ Aggregate

2´-4´ Landscape Boulders

Deaf Space Design Guidelines — Student Life Spaces



Deaf Space Design dictates a stronger visual connection to one's surroundings. When one's form of communication is a visual-kinetic form, the environment has a greater impact. Lighting, color, line of sight, and layout of spaces all play a role in the ability to effectively converse. The need to clearly see an individual's front torso and face commands a greater attention to detail to provide an adequate communication space. The following vignettes provide a foundation of guidelines for design for the deaf community in a living and learning environment.

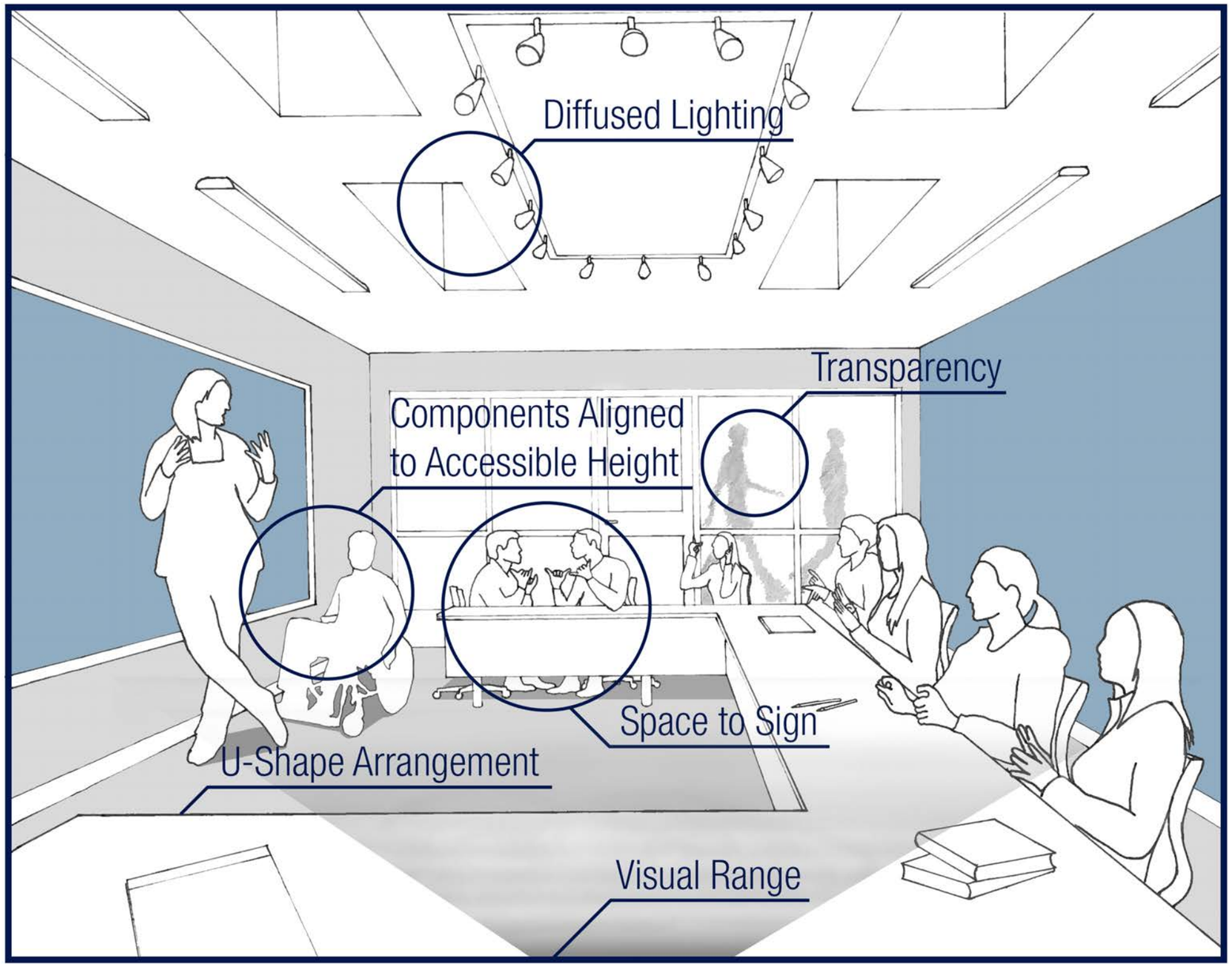
Line of sight should be provided as much as possible to provide visual connection to surroundings and other occupants. This allows visual communicators the ability to "yell" or communicate across larger distances.

Appliances should be located **on a center island** to allow users to cook and still have a visual range of most of the lounge area. This allows occupants to not turn the back to the room keeping a visual connection the space at large.

Reduce sound reverberations through the use of acoustic panels. Sound reverberations interfere with cochlear implants. By reducing sound reverberations especially in open spaces with poor acoustics, it allows users to keep communicating.

Flexible seating arrangements allow communicators the ability to face each other and rearrange the space as needed. Users should have multiple seating heights and furniture that can be easily moved to adapt to the situation.

Deaf Space Design Guidelines — Academic and Meeting Spaces



Diffused lighting helps eliminate shadows, glare, and reflection that interfere with visual communication. Daylight through the use of skylights is ideal for learning environments because of the soft glow reflected from surfaces. A mixture of lighting should be utilized to reduce shadows and glare. This could include luminous ceilings and directed lighting mixed with large surface area lighting. Directed lighting may be focused on occupants within the space based on furniture arrangements to eliminate shadows.

Classrooms should be designed to meet the needs of those in a wheelchair. Adequate space should be provided to maneuver a wheelchair throughout the classroom space. As well, components should be **aligned to an accessible height** such as marker boards being mounted only 2 feet from the floor.

Transparency should be provided as much as possible to allow occupants to understand the happenings of the environment around them. Line of sight to as many adjacent spaces as possible allows occupants to connect to activities outside of their occupied space. Glazing can be clear or slightly opaque to provide a sense of privacy.

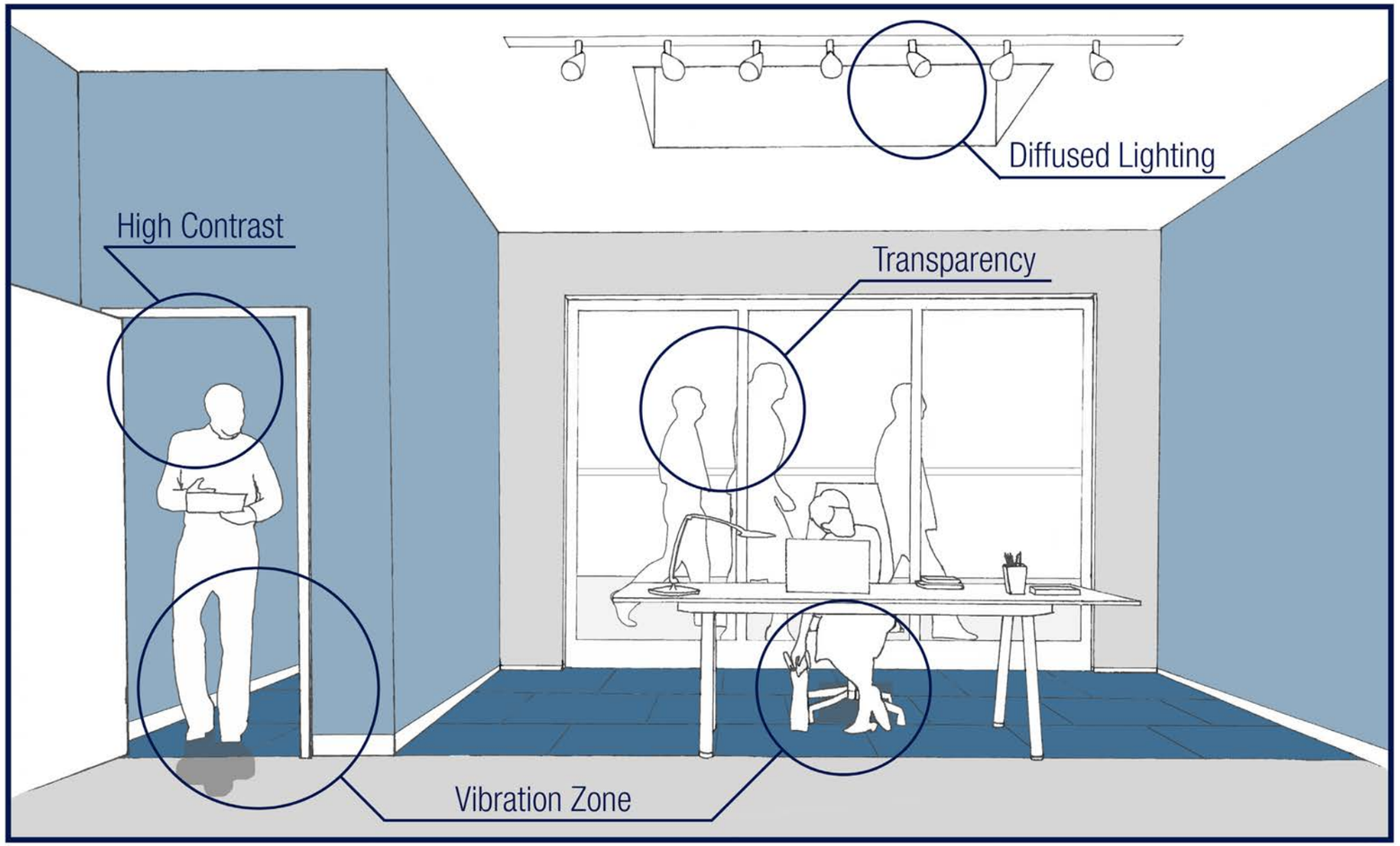
Classroom sizes are larger than a typical classroom because of the need to allow **space to sign.** Students need the ability to stand or sit at a far enough distance apart to visually communicate.

All classroom spaces should have a semicircle or **U-shape arrangement** to allow a visual connection between all students.

Each student's **visual range** should be such that they can see all participants within the classroom environment. An individual's visual range is the area that can be seen with little movement of their head.

High contrast between wall surfaces and skin tone should be provided to ease visual communication. Colors that provide the highest contrast with most skin tones are muted blues and greens.

Deaf Space Design Guidelines — Office and Work Spaces



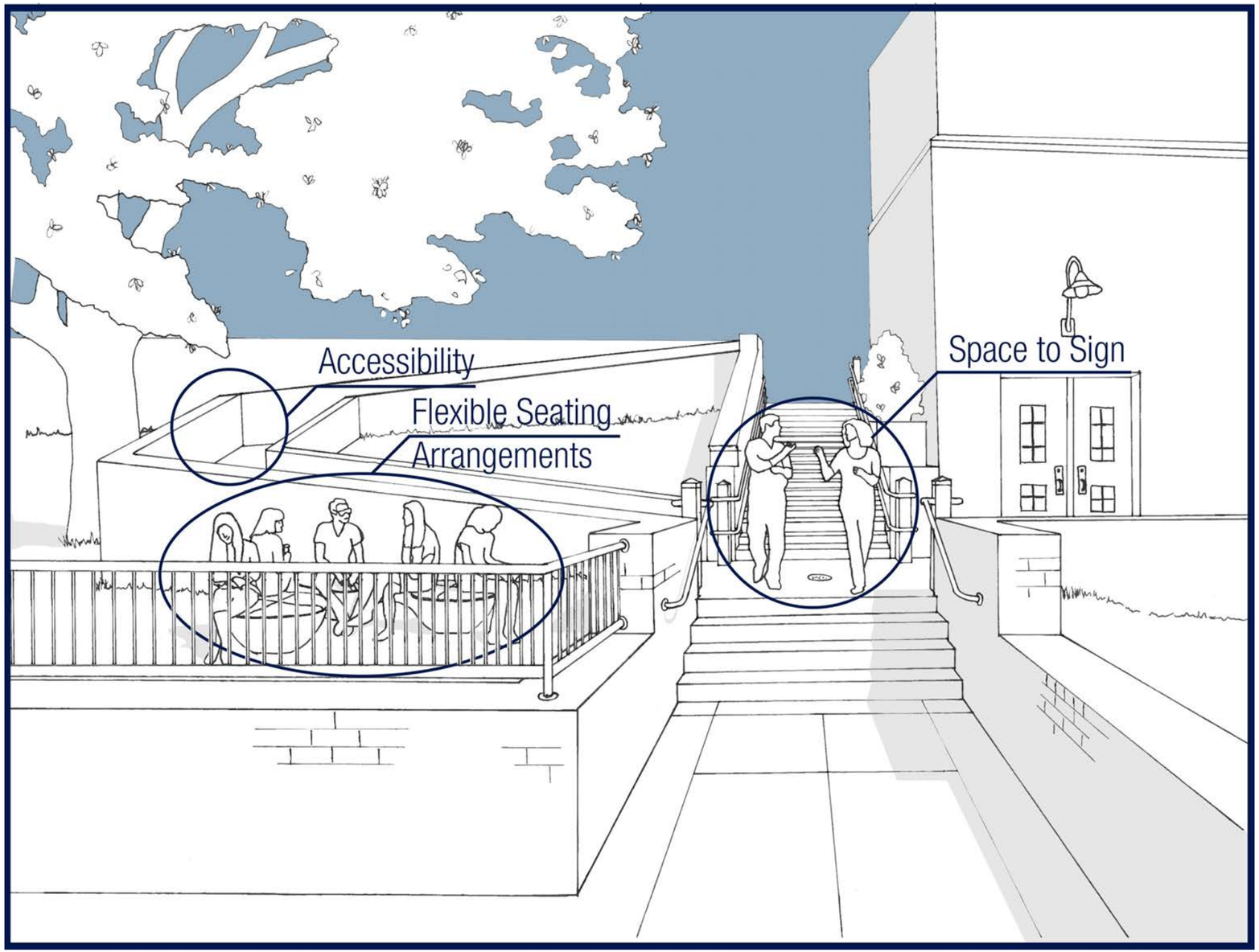
High contrast between wall surfaces and skin tone should be provided to ease visual communication. Colors that provide the highest contrast with most skin tones are muted blues and greens.

A **vibration zone** should be provided at entry ways that are not within visual range of the occupants. This vibration zone will be comprised of materials that allow the movement of someone approaching the space to be felt by occupants such as rubber flooring.

Transparency should be provided as much as possible to allow occupants to understand the happenings of the environment around them. Line of sight to as many adjacent spaces as possible allows occupants to connect to activities outside of their occupied space. Glazing can be clear or slightly opaque to provide a sense of privacy.

Diffused lighting helps eliminate shadows, glare, and reflection that interfere with visual communication. Daylight through the use of skylights is ideal for learning environments because of the soft glow reflected from surfaces. A mixture of lighting should be utilized to reduce shadows and glare. This could include luminous ceilings and directed lighting mixed with large surface area lighting. Directed lighting may be focused on occupants within the space based on furniture arrangements to eliminate shadows.

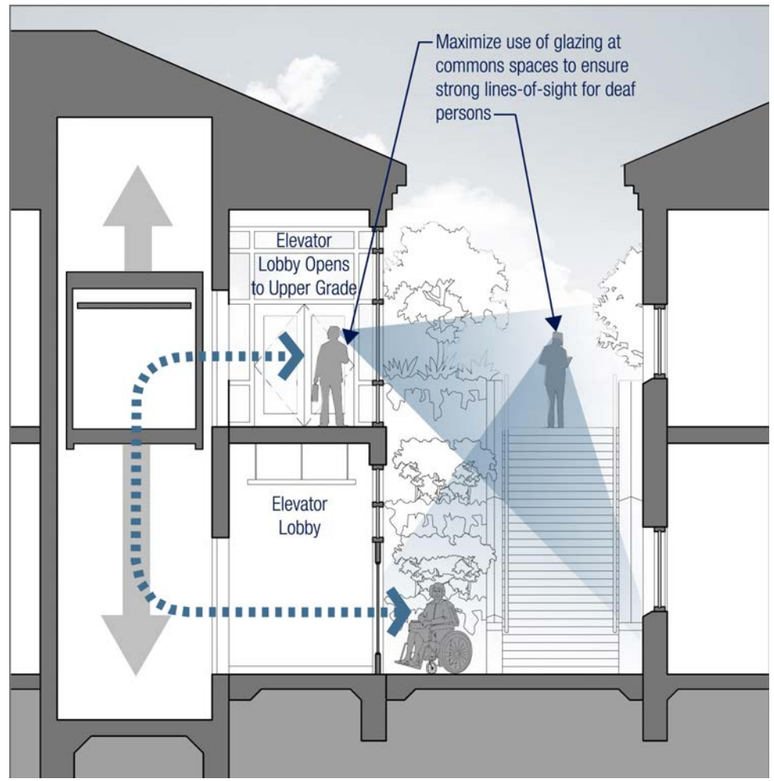
Deaf Space Design Guidelines — Exterior



Accessibility needs to be increased across campus. Wider accessible ramps should be added to the many level changes occurring across the site. Ramps also provide an easier option to traverse level changes while continuing to communicate with others.

Flexible seating arrangements allow communicators the ability to face each other and the surrounding area easily. This allows users to maintain a greater visual connection to their surroundings. Users should be provided multiple seating heights and open ended furniture. This allow site furnishings to be used in multiple directions and for varying areas.

Adequate **space to sign** should be provided on walkways. Users need room to turn and face each other to communicate. Stairs are particular difficult because most users need to see the step in order to maintain balance and not trip. The hard of hearing need to have their visual attention on each other to communicate and not where they are walking. Whenever possible, gradual ramps should be provided as an alternative to stairs for ease of use.



Above: Example of the use of elevator lobbies and common spaces to aid in accessible circulation along "The Spine."

Impact on Learning Design Guidelines

Decades of research indicate a correlation of certain facility features with student achievement, particularly at risk-students. The following are guidelines for maximizing facility impact on learning by incorporating these features in building design.

Acoustics

Preventing distracting noise from adjacent space and minimizing reverberation in learning space are two primary factors. Both should be measured per the standards set by Acoustical Society of America (ASA). In learning spaces, background noise should be kept below 40 decibels when the room is unoccupied and all equipment is running and reverberation in classrooms. Reverberation should be maintained between 0.4 and 0.6 seconds for classrooms and labs. Strategies include:

- Sound confining HVAC equipment, duct silencers and turns in HVAC ducts to minimize air and equipment noise.
- HVAC equipment to be located in a manner to prevent noise transmission to learning spaces.
- Sound absorbing finishes to reduce reverberation.
- Insulate walls and ceilings to minimize noise transmission from adjacent spaces. Maintain noise reduction coefficient levels in walls as recommended by the ASA.
- Avoid placing classrooms and labs adjacent to noisy areas such as gyms, commons, cafeterias, music rooms, etc.
- Consider sound reinforcement systems after the above are incorporated. Some believe that if the above requirements are met, sound reinforcement systems are not needed.
- For larger assembly rooms, employ an acoustical consultant to advise on acoustical matters.

Indoor Air Quality

Some of the more common Indoor Air Quality (IAQ) contaminants include carbon dioxide, carbon monoxide, volatile organic compounds (VOCs), fungal spores (mold), dust, particulates, skin cells and formaldehyde. These and other contaminants should be kept with in EPA recommended ranges. Strategies for maintaining good indoor air quality include:

- Moisture control measures in building envelope for the building environmental region.
- Meet minimum fresh air requirements stipulated by ASHRAE.
- Ducted supply and return.
- High efficiency air filtration systems.
- Proper HVAC drainage systems.
- Minimize use of VOC's and other contaminants in materials and maintenance.
- Localize exhaust control for concentrated contaminant sources.
- Windows and outdoor natural ventilation when thermal comfort conditions are not compromised or exterior pollutants are not introduced via windows.
- Separate operable windows and HVAC intakes from loading zones or pollutant producing sources.
- HVAC equipment air intakes per EPA recommendations.
- Routine IAQ testing/monitoring one — two times per year.

Lighting

Provide natural daylighting and controls per "Guide for Daylighting for Schools" by Lighting Research Center Rensselaer Polytechnic Institute, and as follows:

- Minimize or eliminate direct beam radiation.
- Ability to darken space with lighting controls.
- Low view glass for younger occupants.
- Orient building to maximize daylighting.
- Avoid uncontrolled skylights.
- Optimally size overhangs on south facing glazing.
- Consider balance between clear glazing and low-E glazing.
- Proper glass-to-floor ratios.
- Bounce light deep into space.
- Select light interior colors to enhance light reflection.

For artificial lighting provide:

- Appropriate type of lighting and lighting levels per the Illuminating Engineering Society of North America.
- Maintain consistent light levels except for intentional dark or light areas.
- Intentionally darken spaces such as projection screens and lighted spaces such as marker boards.
- Appropriate dimming controls.
- Fixtures compatible with daylighting design.

Thermal Comfort

Maintain a balance of humidity and air temperature for thermal comfort per ASHRAE. Strategies are:

- Individual room temperature control.
- Humidity control.
- Building envelope moisture control.
- Air movement and velocity per ASHRAE.

Space and Equipment

Provide adequate space and equipment for learning areas. Follow space guidelines published by the Council of Educational Facility Planners International (CEFPI).

Building Condition

Research indicates a correlation of overall building condition and student achievement. Facilities should be maintained in good condition to realize this correlation with student achievement. A target level should be established for the Facility Condition Index (FCI) to ensure a minimum condition level. A maximum FCI level of 25 is recommended, with lower levels preferable. Correct and restore water leaks promptly, and maintain visible conditions in a quality manner to minimize the perception of poor conditions.

Maintaining lower FCI levels is also important to preserve capital investment. Allowing FCI levels to creep up, either from poor maintenance or under funding, can compromise previous facility improvements.

Special Needs Design Considerations

The intent of these guidelines is to summarize general design guides for special needs students. General design guides in other sections of this master plan also apply such as maximizing impact on learning and deaf space design. This summary is intended for children with moderate needs and is not an all-inclusive list. The design professional should work with TSD staff on the design of special education needs space.

- Limit activity spaces to six to eight children.
- More space for their activities and to preserve the personal space of others. The Council of Educational Facility Planners International recommends 35 to 45 square feet per student.
- Classrooms designed for group activities but also with alcoves or small rooms for individual activity or calming.
- Greater physical and acoustical separation between activities to reduce distractions.
- Modular and flexible furniture.
- Place windows above eyesight level to minimize distractions while allowing natural daylight into the room.
- Provide space for parental involvement with teacher and students as well as observation without distraction, such as observation rooms.
- Locate spaces in the mainstream of student activity to maintain student dignity.
- Space and equipment for speech, language and physical therapy.
- Support multi-sensory stimulation such as communications techniques, tactile tasks, music, movement, light technology and sound technology.
- Appropriate lighting to avoid glare and flickering.
- Individual room control of air conditioning and heating.
- Durable materials in all areas.
- Wider corridors and walks to all adequate passing space.
- Minimal travel distance between destinations such as physical education, music, art, library and food services.
- Playground areas that are secure, safe, provide stimulation and provide physical opportunities for children with gross motor skill challenges.
- Outdoor walks, pedestrian walks and pathways should be physically separated from vehicle circulation.

IMPLEMENTATION

Implementation

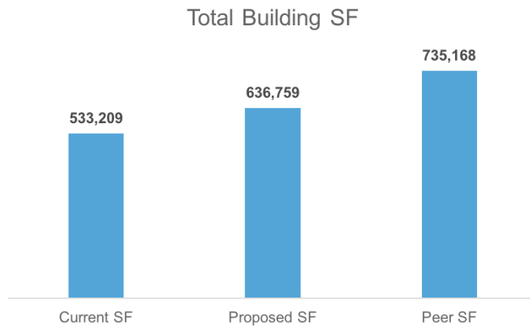
Opinion of Probable Cost

The opinions of probable cost (OPC) are based on unit prices from recently constructed facilities in the Austin area, adjusted for the unique construction environment factors at TSD (limited on-site storage, required background checks, limited construction times). The unique construction environment increase was obtained from general contractors experienced with TSD and is estimated at 20-25 percent. The improvements in the following table do not include renewal costs. The OPC includes estimates for construction cost, design fees and program management fees.

Total Building Square Footage Below Peers

The proposed net increase in building square footage would result in the district being below peers as indicated to the right. The Peer Square Footage is building square footage in 2026 given a continuing enrollment trend, if TSD was consistent with peer schools for the deaf.

$184 Million estimated 30-year cost of ownership savings by keeping total building square footage below peers and strategic renewal.



Conceptual Phasing & Opinion of Probable Cost

Texas School for the Deaf Campus Master Plan

Improvement	2016 OPC	2018	2019	2020	2021	2022	2023	2024	2025	Justification
Annual inflation factor		6.0%								
		Phase 1		Phase 2		Phase 3		Phase 4		
New Toddler Addition, demo two cottages	$3,751,220	$4,201,366		construction						Accommodate increasing enrollment, accessibility deficiencies, $17M cost of ownership savings
Repurpose Clinger Gym to practice/play gym, elem activity center	$3,759,480	$4,210,618		construction						Preserve iconic building, accessibility deficiencies, match peer gym ratio
New flex multi-purpose/theater to replace auditorium	$18,569,778	$20,798,151		construction						Top stakeholder priority, accessibility deficiencies, $8M cost of ownership savings
Reconfigure Ford photo lab/culinary arts to 3 CTE programs	$1,243,720	$1,392,966		construction						Occupant safety, meet industry space standards, comply with HB5
New Central Service Center	$9,676,590	$10,837,781		construction						Free up space for academic programs, replace temporary buildings, centralize stakeholder services
Site improvements (parking, roads, covered walks, accessibility)	$2,594,938	$2,906,331		construction						Accessibility deficiencies, parking to accommodate growth trend, erosion control
Repurpose portions of dorms to create residential learning kitchens	$802,400			$1,009,766	construction					Improve student life, accessibility deficiencies
Move Interpreters from cottage to ERCOD/Toddler Buildings	$102,749			$129,302	construction					Preserve iconic buildings
Repurpose Deaf Smith Building to DFAS and translators	$1,368,564			$1,722,245	construction					Expand student center to new facility, locate DFAS adjacent to stakeholders
New Seeger multipurpose workout room & locker addition.	$6,596,436			$8,301,166		construction				Match peer gym and locker room benchmarks for number of spaces
Upgrade baseball/softball practice facility	$757,560			$953,338		construction				Occupant safety, consistent with peer facilities
Expand CTE to north end of Pease and create Tech lab	$354,000				$472,214	construction				Comply with HB5, centralize information technology facilities
Remove temporary buildings	$53,100				$70,832	construction				Provide permanent space for occupants, accessibility deficiencies, occupant safety
Demo cottages, site restoration	$519,200				$692,581	construction				$16M cost of ownership savings
New Student Center, flex learning space	$7,608,168				$10,148,824		construction			Student life, flexible learning space top stakeholder priority
Stadium upgrades (synthetic turf, track upgrade)	$1,734,600				$2,313,849		construction			Systems at normal life, reduce water consumption, adequate track lanes to host track meets
Locate Transitional Housing at south end and add two story unit.	$3,122,280			$3,929,177		construction				Accommodate transition students, locate transition students in age appropriate zone
Site Improvements (landscaping, technology, fencing, demo Old Boiler Bldg)	$3,500,000			$4,404,512		construction				Safety, security, sustainability, landscaping enhancements.
Repurpose ES/MS/HS admin space to academic use	$1,557,600					$2,202,406	construction			Accommodate growth trend, emerging education programs
Repurpose existing Transitional Housing to special needs	$950,561					$1,344,068	construction			Accommodate growth trend, locate students in appropriate campus zone
New HS commons between Koen and Lewis halls	$3,186,000					$4,504,922		construction		Enhance student life
MS/HS/CTE addition per enrollment change	$13,629,000					$19,271,054		construction		Accommodate growth trend, emerging education programs
Second central plant	$3,835,000							$6,092,823		Support phase 4 buildings, includes distribution. Existing central plan will be at capacity after phase 3.
Outreach and applied research center	$4,998,834							$7,941,855		Support thousands of Texas deaf and hard of hearing students that don't attend TSD
Outreach and applied research center visitor housing	$4,609,080							$7,322,636		Housing to support outreach and research center for visiting parents and researchers.
Site work and parking for outreach and applied research center	$1,061,263							$1,686,072		Site improvements to support outreach and applied research center
Yearly total	$99,942,120	$44,347,213		$20,449,506	$13,698,299	$27,322,451		$23,043,386		
Biennium total			**$44,347,213**		**$34,147,805**		**$27,322,451**		**$23,043,386**	
Master plan total									**$128,860,854**	

Facility Funding Options

The following are some potential facility funding sources that may be considered. State funding sources are authorized and defined by the Texas Legislature.

State Revenue Bonds

Commonly used for new construction, these are bond funds that are typically authorized by the Texas Legislature.

State General Revenue Funds

These funds are typically authorized by the Texas Legislature with a General Appropriations Act. General revenue funds are not typically used for capital improvements. They are typically used for ongoing operations and maintenance expenses.

Other Potential Revenue Sources

The following revenue sources are unlikely to cover the cost of proposed capital improvements. They can, however, offset ongoing operation and maintenance expenses or address very specific and relatively minor needs.

Public Use of Facilities

While this has not been significant source for funding, some funds can be realized from the use of TSD facilities for fees. These use fees would need to be compared to TSD operating cost for true funding source quantification.

Private-Public Partnerships

Partnerships with private entities can be a source of funding. This is most common with initial cost of programs or facilities. The ongoing cost to operate these programs must be considered.

Higher Education Joint Efforts

Cooperative program efforts such as career and technology education or research efforts with higher education entities can be a source of funding. This could be on an initial and/or ongoing basis.

Grants

Grants from public and private sources. This is most common for initial facility costs. Funding for research or innovative efforts are among the more common types of grants.

Private Donors

Funds can be obtained for facilities and equipment from companies or individuals. These are commonly related to buildings and program equipment.

Energy Credits

Energy providers often provide energy credits for energy improvement upgrades. This is typically associated with renovation projects.

APPENDIX AP

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Stakeholder Survey Results

***For this survey, respondents were shown these photographs of each building and asked for their opinions regarding the structure.*

Boiler Building

1. Please rate your personal interest towards this building.		
Answer Options	**Response Percent**	**Response Count**
Not Important to me	29.5%	89
Indifferent / not sure	41.1%	124
Very Important to me	29.5%	89
	answered question	**302**
	skipped question	**10**

2. What do you think should be done with this building?		
Answer Options	**Response Percent**	**Response Count**
Retain in place as is	9.0%	27
Renovate and adapt for a new use (academic, student life,	64.9%	194
Replace with a new/different facility	26.1%	78
	answered question	**299**
	skipped question	**13**

Heritage Center

3. Please rate your personal interest towards this building.

Answer Options	Response Percent	Response Count
Not Important to me	2.0%	6
Indifferent / not sure	9.6%	29
Very Important to me	88.4%	266
	answered question	301
	skipped question	11

4. What do you think should be done with this building?

Answer Options	Response Percent	Response Count
Retain in place as is	82.3%	246
Relocate the Heritage Center and find an alternative use for it	8.7%	26
Replace with a new Heritage Center	9.0%	27
	answered question	299
	skipped question	13

Clinger Gymnasium

5. Please rate your personal interest towards this building.		
Answer Options	**Response Percent**	**Response Count**
Not Important to me	7.4%	22
Indifferent / not sure	25.7%	76
Very Important to me	66.9%	198
	answered question	**296**
	skipped question	**16**

6. If this building was adapted for other uses, which of the current activities need to be preserved? Check all that apply.		
Answer Options	**Response Percent**	**Response Count**
Playing Court	74.6%	209
Spectator Bleachers	50.4%	141
Locker Rooms	43.6%	122
Bowling Alley	68.2%	191
	answered question	**280**
	skipped question	**32**

7. What do you think should be done with this building?		
Answer Options	**Response Percent**	**Response Count**
Retain in place as is	19.9%	58
Renovate and adapt for a new use (athletics facility,	55.5%	162
Replace with a new gymnasium	24.7%	72
	answered question	**292**
	skipped question	**20**

Toddler Center

8. Please rate your personal interest towards this building.		
Answer Options	**Response Percent**	**Response Count**
Not Important to me	13.1%	38
Indifferent / not sure	35.5%	103
Very Important to me	51.4%	149
	answered question	**290**
	skipped question	**22**

9. Do you feel that the current use of this building is a most effective use of the structure?		
Answer Options	**Response Percent**	**Response Count**
Yes	36.0%	104
No	28.7%	83
Don't Know	35.3%	102
	answered question	**289**
	skipped question	**23**

10. What do you think should be done with this building?		
Answer Options	**Response Percent**	**Response Count**
Retain in place as is	31.5%	90
Renovate and adapt for a new use (academic, student life,	38.8%	111
Replace with a new/different facility	29.7%	85
	answered question	**286**
	skipped question	**26**

ERCOD Building

11. Please rate your personal interest towards this building.		
Answer Options	**Response Percent**	**Response Count**
Not Important to me	13.8%	40
Indifferent / not sure	42.9%	124
Very Important to me	43.3%	125
	answered question	**289**
	skipped question	**23**

12. Do you feel that the current use of this building is a most effective use of the structure?		
Answer Options	**Response Percent**	**Response Count**
Yes	43.2%	124
No	17.8%	51
Don't know	39.0%	112
	answered question	**287**
	skipped question	**25**

13. What do you think should be done with this building?		
Answer Options	**Response Percent**	**Response Count**
Retain in place as is	43.1%	121
Renovate and adapt for a new use (academic, student life,	35.9%	101
Replace with a new/different facility	21.0%	59
	answered question	**281**
	skipped question	**31**

Auditorium

14. Please rate your personal interest towards this building.		
Answer Options	**Response Percent**	**Response Count**
Not Important to me	2.4%	7
Indifferent / not sure	13.8%	40
Very Important to me	83.7%	242
	answered question	**289**
	skipped question	**23**

15. What do you think should be done with this building?		
Answer Options	**Response Percent**	**Response Count**
Retain in place as is	19.0%	55
Renovate and update with accessibility, amenities and new	63.0%	182
Replace this building with a new auditorium	18.0%	52
	answered question	**289**
	skipped question	**23**

Valley Cottages

16. Please rate your personal interest towards these buildings.		
Answer Options	**Response Percent**	**Response Count**
Not Important to me	25.3%	73
Indifferent / not sure	25.0%	72
Very Important to me	49.7%	143
	answered question	**288**
	skipped question	**24**

17. What do you think should be done with these buildings?		
Answer Options	**Response Percent**	**Response Count**
Retain in place as is	5.6%	16
Renovate all cottages and retain as updated housing	43.0%	123
Renovate one cottage for new use (alumni center, academic	14.3%	41
Replace all cottages with new student and staff residential	37.1%	106
	answered question	**286**
	skipped question	**26**

18. Based on your responses to the earlier questions, please rank, from one being the highest priority to preserve to 7 being the lowest priority to preserve, the buildings and building groups previously mentioned:

Answer Options	1	2	3	4	5	6	7	Rating Average	Response Count
Boiler Building	12	13	17	17	14	23	122	5.59	218
Heritage Center	107	28	22	21	20	10	16	2.61	224
Clinger Gymnasium	32	53	59	36	18	24	2	3.16	224
Toddler Center	4	18	32	61	46	46	10	4.41	217
ERCOD Center	2	20	26	31	76	55	23	4.79	233
Auditorium	48	72	41	25	22	12	17	3.02	237
Valley Cottages	38	26	27	37	33	47	47	4.29	255
								answered question	262
								skipped question	50

Comments

19. Please feel free to include any comments as to issues, elements of the campus historic fabric or details of any of the buildings included in the survey that you wish to elaborate on.

(All comments generated from the survey have been included without any editing for grammar, spelling, etc. Individual comments are separated by full line breaks.)

SAVE ALL BUILDINGS! RENOVATE/UPDATE TECHNOLOGY/ACCESSIBILITY

SAVE ALL BUILDINGS! JUST RENOVATE, UPDATE W/ NEWEST TECHNOLOGY!

Oldest building standing on campus should be retain with historical significance information stated in heritage building. Could be used for Alumni association or Meetings.

I have seen the Valley Cottages that are required lots of repairs. Time to let them go. I dont know how they are better right now after I left. No idea?

The historical part of auditorium needs to be preserved due to history but it needs to be updated. The cottages have history but its beyond repair. We need more residential spaces for new incoming students. Make it more family style, not dormitory.

ECROD and President House (TLC) it would be great for toddlers class since the kids numbers are expanding! They are nearby ECE which is good place. ECROD should located to mobile house near Nellie that has been abandon since. The cottages are my strong believe that they needs to remodeling, they are good for guests (from deaf schools sports, other school visit, student life purpose, intern students). Clinger gym, oh no, I would never want to demolish it, it is very historic for us as albumi, remodeling them, please. :)

All Cottages need stay due for athletic program such like Volleyball, Basketball, Baseball/ Softball, etc from out of states to stay there to sleep in for the tournament weekend not to use the dorms.
Clinger Gym need to use in basement for locker and equipment too storage.
Some of land are useless and use it as for park lots.
Between Adm office and CTE wall need to become door walk through, not to walk around at end.
Seeger Gym park MUST be staff only, Not parents or visit to use.
LEAVE Grass ALONE!!!!! ATV use walk way or drive way. FIX it for ATV to get through.
Park lots behind Football field need fix to more room for traffic.
Park lots between Aud and TSD Gym need more spaces.

Most historic buildings should be left alone with only renovate inside to meet the modern technology with the quality of education for students needs!

Keep our TSD campus and have them renovate the facilities such as the old power building and use for more(2nd) Heritage museum.

Hope that keep old history at TSD

You could renovate one or two cottages for residential use, and renovate other cottages for office use. PTSO needs its own office & storage. More parking is needed all over the campus. More meeting rooms are needed.

You had better to change in the future as more valuable and visual must be can to design. Because you need to support for the design that TSD.

all old TSD building look good to me. the auditorium will add new ramp behind the building maybe....

that auditorium need be to tear down, because there were no accessible for wheelchair students.

This TSD made everyone make education ,living,learning,social,theatre etc more made all students feel like home. Its very important for student live there. Im very very proud of TSD. Its deaf culture stay power strong education. I love TSD.

Save all old Oak trees, too! And anything that are historical. All buildings are for TSD only for students, staff, visitors, ASL/Deaf culture perseverance. I don't wish to see them to be demolished, removed, or changed for different purposes for outside TSD. Please keep all things as they are. Thanks

I wish this place better and lookin good. Because people would love this campus..easy interesting this education and future life

Comments Continued

The campus is beautiful, keeping the historical design while updating and making better use of the campus would be ideal. Losing the historical significance associated with visual appeal would be tragic.

Don't let FDC be in TSD. Retain all TSD buildings such as the capital still is there as it is over 100 years.

Bldg "library" between hereditary /historical blg & auditorium also need to be saved, too.

every buildings are important for different reasons that fit deaf students/staff needs

I really am horrified that you are asking us to prioritize buildings we feel are ALL worthy of remaining intact. More bad feelings that you just want to sell our campus to developers. ANGRY

Just please be thoughtful - TSD is a huge piece of history. Keep bricks and other important things if some buildings are going to be demolished - but please try to renovate first.

I would to retain all historical buildings, but better for renovation inside and keep the historical building outside.. Demolish is bad idea and I don't want to destroy our historical memories. Our campus must be preserved and protected.

Keep cottages as historic. Don't cut more oak trees!!!!!

Need have buildings for independent living skills students (apts), separate building for ECE students with its own cafe, mini audience, support center, playground.

It is important to listen deaf community who really care TSD and their history and future

I would to see wrestling gym get some improve.

Make sure you make it fair for everyone. Make it better as well.

Do NOT abolish any building on campus.. We need all of them to serve our students/staffs! Some buildings need to be updated with technology and "make up" :)

The survey was not designed in a way that allowed for in-depth responses. Please continue to consider alternate ways to include community feedback such as forums, focus groups, etc. This survey was also not accessible to those individuals who use ASL as their primary language. In some cases, there were insufficient options on what would be the best way to approach older buildings. For instance, the separate space for the toddler center is very needed, but the current building may be too small of a space.

Every building has siginigicant needs. All serve different purposes - no less or more.

lousy building modern suck !!!

Need to upgrade for PIP (Parnet Infant Program) to more room and space for new students.

Just listen to the Deaf Community's need!

Limited options made it hard to sometimes make a decision on what I would want done

Save history and important to remember.

Please make clinger gym make live again

I wanted to leave them alone as it is and I've had lots of memories this TSD campus. They're good building that can useful for staffs and students to acknowledged about their TSD historical. TSD is TSD, period.

Please keep history And dorm neec replace new and cha ge

Preserve the whole campus and that is very important for our future and many years to come.

You can use last two cottage 570/569 to build tall building for visitor/guest to be use when. Sleeping. They need bed to accommodate! When having visitor from different state such as athlete/ Conference/concert. Or rent a room!

I want to preserve bowling alley because it's part of history and we should have bowling alley to have fun.

Whenever there are a demolish of a building, make sure that this space will be use for a better advantage toward TSD students. There are so many program that really need an expansion in space size. PIP is the program that really need to expand the space size.

Those buildings are my best memories! They are so beautiful buildings.

Keep everything authenticity.. Keep deaf-friendly and deaf accessible in this designs.

I keep the building at tsd for history. I am cherish TSD

Please leave TS D as it is with s few remodification

Please do not remove our campus historic. Just renovate them for better.

Update what needs to be updated. But don't demolish and replace with completely new. Keep what can be kept. Lots of history there

Please research on Deaf Space architecture, that is will very resource for you.

I love the environment of TSD, and would like to see that any future remodeling keep this same environment - Thank you!

place a historic marker for each building stating what they were used for.. also place a historic marker for a tree where cows were hanged up for slaughter and concrete water trough for cows to drink

My son lived in the dorms, and now in the cottage. I think that the living, and play, areas for the children should be renovated first before the other buildings.

I am one to preserve historical architecture but understand a limited budget comes into play.

Bowling area is the most memories of our deaf community and we want to retain that area and use for our PE activities.

Comments Continued

The options you have were tricky. There was no medium ground between a demolishing or a renovation. All options that offered “new facilities” weee not clearly on what it wld be used for. If anythinf ALLL buildings on campus should be used primarily for TSD its staff and students.

The memories of those who attend this school lives beyond just those who come to school here. It is forever embedded in those who attended this school’s family. This school is what helped to shape them into the productive citizens that they have become.

There was not an option to identify the Clinger Gym for renovation--that would be my choice. Thanks.

Because we are a residential school, I believe that renovating, updating, or revitalizing living spaces for our students will help make TSD feel more like “home”. As we grow, retaining well-kept living spaces is vitally important. Our students deserve residential buildings with amenities that meet their needs and provide comfortable living spaces for students who are far from home.

Need design fix new cottage throw away old cottage.need design fix new museum .need fix news air condition best activity gym.

What about getting rid of the HR portable building and using that space for a new TLC/ Family learning center? I like the idea of keeping the old houses for the historical story part of TSD but I like their location near the main gate for the TLC/Family learning center.

Please keep all good builder everywhere for good memory and be remember what we been enjoy and learn lot from all history gene ..

I don’t think the survey was parsed fairly. (ie: keep one cottage for alumni, student life and demolish all others)

Need four courts for new gym which is Clinger gym(remove)

Not sure if it works well for Alumni members. It seems not clear! Thank you for your attention!

Preserve older facilities/buildings to reflect flashback of how TSD has represented the students, staff, alumni and community .. History is important! Retro is classy and classic!

Historically buildings

I would like to see the auditorium rebuilt with a new modern auditorium with a fly system, comfortable seating, costume storage, scene building shop, offices, box office, concession stand, new curtains, more catwalks and classrooms. Another Idea that I had with the Heritage Center is to move the museum to another location. Add a wall down the center to split it into two large rooms, and one side can be a theatre classroom for HS and the other side a theatre classroom for MS.

Please do NOT ever think about touching our heritage center and it is the oldest building on campus. Everyone in the nation talks about it. We also should keep the two houses because they are perfect places for outreach services. It would be great if one of the cottages can be renovated and converted into a toddler learning center so that way the second house can be used for more offices for outreach services. Thank you.

History is important and is nice to have buildings maintain their history

The Toddler Center building should be repurposed for another program. The ERCOD Center and the Toddler Center are both good buildings but they are both way too crowded and becoming dangerous because of that.

Clinger gym has a part time usage with children-preschool and elementary aged students using it during mild temperature weather days. With renovation, it could then be the gymnasium location for the elementary, snd, and preschool students to use on a year round basis. Multi-purpose usage also if a stage or raised platform was added. Something will have to be done to increase the # of Accessible bathrooms.

I feel that the auditorium needs to be replaced with a new, updated auditorium, which includes classrooms and offices for the theatre teachers, a costume storage room, a scenic building shop, a box office, and a black box theatre. This will help benefit the students and will also help benefit the community as more rentals will come.

TSD Athletic Dept. don’t have a baseball field. Need to build the baseball field on campus. Just feedback to remove all old tennis courts and then build softball field. So,the old softball field change to the baseball field. Build new tennis courts on valley or someplace.

The campus does not have most of its original buildings from the early days. I think it is highly important to preserve older buildings. The auditorium could really be replaced. The seats are built for skinny people back in the 60’s, and the equipment is old and could use replacement. The auditorium is also not of proper size for a campus this large. (Too small) I think the new auditorium should be twice in size, and the seats should be wider.

Maybe not keep just one cottage but at least two and demolish others

old gym. suggestion: Wrestling GYM/climbing ropes, climbing wall

KEEP THE VALLEY COTTAGES.

Demolish the half of kelburg building and build a new additional to it

There are only few old buildings left. Especially the GYM. I understand about the cottages... but is there a way to keep 3 of them instead of one and demolish the rest? And not to cut so many trees because the ground need them to stay cool! Without trees, the sun kills the grass. Thanks

Some options were not given - such as renovate and/or expand to address current use.

It would be great that you will share with us what the plans are to renovate and replace the buildings. Also to bring our feedback again later. Really appreciate this survey to collect our opinions and feedbacks

Heritage center is extremely an important part of our Deaf identity, therefore please leave it alone totally. Cottages needs to be removed for ACCESS program for a new dorm with a nice kitchen for both girls and boys together in order to enhance their social skills and interaction. We need two story parking building nearby the school and dorm buildings. We need other dorm for freshmen students in the valley. Clinger gym downstair needs to be renovated with a new equipment storage for sports.

Comments Continued

Please keep Heritage Center since it is the oldest campus building. I would love to have the old power plant turned into an Archive since it is next to the museum in the Heritage Center. Thanks.

Thank you for the opportunity to have input.

Make sure the buildings are safe for use, and when renovating/building, consider DeafSpace.

We definitely need a wrestling room, elem.'s own gym, MS's own gym, and SOTX's own athletic facilities.

none

We need a building for the departments that provide Student Support services. By having a building for SLPs, OTs, Behavior Support and counselors, this would allow us to offer a comprehensive, multidisciplinary approach for our students.

It would be nice if the Laundry house could be renovated to become the center of TSD- maybe use for admissions or superintendent's offices

Programs like ACCESS need to be relocated to a place like the cottages or the ERCOD bldg where they can teach independent living skills. Many of the buildings are not being utilized in a manner that is efficient to the goals and vision of TSD

For the cottages: an idea for an use. For the parents of the residential students who would come to town for meetings, celebration (graduations, etc), their children's sports events. They could pay little bit for it, like $10 per bed or something (so the money can be used to cover the bills and laundry). As often these parents are paying hundred of dollars on hotels around the town. (It was done at my school back in Minnesota when I was a student there).

Im unsure of the use of many of these building. Im also unaware of the age and historical signifiance. Additionally, Im new to TSD.

In my opinion, many of the historical buildings should be preserved but are not in an ideal physical location for updating the rest of the school buildings.

If we demolish the bigger buildings and make them functional classroom or living spaces we could preserve some of the littler buildings and use for guests

No comments related to the buildings or details to this survey but wanted to suggest to make some space available to add a baseball field to our beautiful and spacious campus.

The current Toddler Learning Center needs to be used in a different capacity AFTER a new center is built for the TLC. The cottages need to be demolished and new buildings erected for a VARIETY of purposes ... not just residential services.

The kitchen in the Special Needs Department is in DIRE need of a SERIOUS,SERIOUS upgrade!! There is black mold that no one other than the staff within this department that seem to notice or care..and we teach our students out of this kitchen every day..This is truly sad and unacceptable.

There are a couple of buildings that are of historical significance, but the rest in question should be either renovated for different use or replaced

PLEASE save OUR Heritage Center!!

This is a beautiful campus, and should be updated and preserved as much as possible. The historical significance of the TSD campus should be the first consideration.

I have little to no connection with these buildings, thus was unable to provide answers to many of the questions.

Renovate the boiling bldg into addition of Heritage Center.

Good nutrition, education, environment to the students' education is an important part of leading a healthy lifestyle. Combined with physical activity can help us all to reach and maintain a healthy and brighter light in the future.

to be honest. those ERCOD and toddler buildings. if people knew that TSD ordered the buildings through Sears catalog and delivered and buoy (by whom I wonder) it may rank higher.. but if we really need to look at facility use...
cottages. I'm very inclined in just removing it entirely and building maybe 2 large dorms/ rec stations for students. (boys/girls) in a very modern interior but a very old exterior that matches what would be been looked like 150 years ago to give campus the illusion of a very old campus that's being preserved like heritage center etc
boiler room must be removed. been at TSD 11 years soon and it's just sitting there. it's in an bad area. not accessible by anyone than business office which needs upgrades myself I think.. if we do build. I do not know what could be placed there tho
clinger gym. granted it's old. would love to see the bowling alley cleaned up. renovated but is it in our best interest? I don't think so. I would greatly prefer a double floor gym with provisions for a wrestling room/lockers on lower level and can be converted to general gym use. basketball:etc during off seasons
I would put that priority one if that ever occurs. with TSD having 60+ teams space is really hard to safely practice for kids from 3rd grade to 8th grade as sometimes 7:8th trade may practice late. I think Elem and MS should not need to practice past 6pm. dinner. homework. transport to home make kids go bed late and get up late arriving school late. affects everyone.

Building a center that use for hospitality and Human Resource such as handle new applicants, guests, families, students and others who visit TSD for first time instead using the Security by the entrance gates by the Congress which will be the major place to enter the TSD instead of using Elizabeth. Human Resource need to be relocated to be near the gate with parking lot because it is not good location for any applicants if we want to impress them to work with us.

N/A

Clinger Gymnasium needs attention for a long time (more than 15 years). We kept asking for air conditioning installation, safety and handicap accessibility and etc., but we never get anyone to get it done.

Save as is please don't destroy our TSD history here

DM Construction Program 2016-17 Appropriation

[Alt #3] Auditorium (544/14)	Business Office (508/35)	Cafeteria (503/34)	Central Plant (512/4)	Clinger Gym (517/27)
Roof repair	Replace roof	Generator for food service	Replace cooling towers	Life safety upgrades
Accessibility upgrades	Egress lighting	Accessibility upgrades	Replace distribution pumps	Accessibility upgrades
Replace HVAC system	Patch exterior enclosure	Egress lighting	HVAC controls	Replace HVAC system
Plumbing system upgrade	Door hardware upgrades		Life safety upgrades	Lighting replacement
Interior finish upgrade	Electrical power upgrades		Electrical power upgrades	Electrical power upgrades
Exterior enclosure repair				HVAC controls
Lighting replacement				Interior finish upgrade
Electrical power upgrades				Exterior enclosure repair
HVAC controls				
Life safety upgrades				

[Alt #1] Cottage (564/24)	Deaf Smith (504/15)	Elementary (505/31A)	ES/MS Boys (527/39)	ES/MS Girls (526/32)
Interior renovation	Accessibility upgrades	Accessibility upgrades	Exterior drainage improvement	Exterior drainage improvement
Technology upgrade	Interior finish upgrade	Exterior drainage improvement	Accessibility upgrades	Accessibility upgrades
Accessibility upgrades	Life safety upgrades		Egress lighting	Egress lighting
Plumbing system upgrade				
Replace HVAC system				

ERCOD (525/29)	CTE Ford (513/6)	Health Center (33)	Heritage Bldg (509/37)	Kleberg (514/45)
Repair interior finishes	Exterior enclosure repair	Accessibility upgrades	Replace ductwork	Replace roof
Accessibility upgrades	Partial HVAC replacement	HVAC controls	Repair exterior walls	Replace HVAC system
Replace doors	Life safety upgrades		HVAC system controls	Replace atrium
			Life safety upgrades	Accessibility upgrades
				Life safety upgrades
				HVAC controls
				Interior finish upgrade
				Improve stormwater drainage

Koen Hall (515/44)	Lewis Hall (516/42)	MS/HS (519/40,41,43)	Pease (500/8)	Seeger Gym (501/9)
Roof repair	Accessibility upgrades	Accessibility upgrades	Electrical power upgrade	Interior renovation
Accessibility upgrades	Improve stormwater drainage	Internal storm drainage repair	Egress lighting	Roof replacement
Egress lighting				Plumbing system upgrades
Improve stormwater drainage				HVAC system controls
				Improve exterior enclosure
				Accessibility improvements
				Egress Lighting

SN Dorms (5708/19)	Swim/TSD Gym (518/12,13)	Site Work	Toddler Center (524/28)	[Alt #2] HR Trailer (T3/26)
Egress lighting	Interior finish repair	Bouldin Creek erosion repair	Accessibility improvements	Foundation repair
Accessibility upgrades	Partial HVAC replacement	Electrical power upgrades	Life safety upgrades	Accessibility upgrades
	Life safety upgrades	Site drainage improvements	Landscape improvements	Site drainage improvements
	Glazing repair		Egress lighting	Life safety upgrades
	Roofing repair			

Total project budget: $40 million

Master Plan Feedback From TSD Website (December 2016-January 2017)

(All comments have been included without any editing for grammar, spelling, etc. Individual comments are contained inside quotation marks.)

"Overall, I think it's a great plan. Even though you did address the parking issue, I strongly recommend that you take a long hard look at the TSD parking lot layout around the Seeger Gym and the TSD Gym. The parking layout for these two gyms really sucks, big time. More parking spaces closer to these gyms are really sorely needed. I realize that it may be hard to do, but can y'all just try to improvise some more in these areas?"

"Wow! They are so awesome! I am glad that they will improve for disabled people can access around the campus, and inside the buildings in the future. I will visit TSD often in the future."

"Considering the projected growth here at TSD, I don't think that the plan for added parking goes far enough. Our parking is already stretched so thin that it seems unlikely that the added parking will be sufficient. I think considering a multi-level parking garage would go a long way towards keeping our green space while also providing adequate parking for staff, families, and other visitors to our campus."

"As we try to beautify the campus, I would like there to be more barriers (like railroad ties) around some of the walkways to keep the mud from pouring on the walkways. We also need to try to re-grade the walkways so they are flat and possible use a surface that will pull away the water or be a little rough so not slippery when wet.

We also need reflective paint or surfaces (rough and glowing) for all of our steps and ramps/ uneven places as we have several students with vision loss and seeing these at night is not at all easy."

"If the money isn't available, is it still possible to add trees and shrubs to the campus?"

"I guess after all these plans are implemented, an physical addition to the Health Center can be planned - if projected enrollment is correct, we'll need it."

"I like the overall master plan however I have a different thoughts about the location of the auditorium and expansion of parking lots. To have more support from the legislator, I was thinking of moving the auditorium to the old Deaf Smith Center and expand the parking lots at the west end of the campus. Open the west end gates only for showings at the auditorium to the public. The auditorium could become a venue for concerts and events. See the examples of Berger Performing Arts Center located at the Arizona State Schools for the Deaf and Blind. (bergercenter.com)"

"Where ERCOD is now, I have heard that the brick on the ground between the driveway and the building is very old original TSD brick. I hope that it can be saved and placed somewhere on campus. Thank you."

"It look so great for TSD. My most concern is drive on grass, will it happen again? Drive on path not grass."

"Just FYI, the bowling alley in the Clinger Gym is the second oldest bowling alley in Texas. The oldest bowling alley is still intact, and it is at Austin Saengerrunde on 1607 San Jacinto Blvd. The bowling alley needs to be preserved."

"I found this very informative and appreciate this very much. All looked awesome."

"Typo (p. 8; Letter I; Student Center description):
'Students after school activities will be housed in the Student Center, as well as distance learning space.'
Change 'Students' to 'Students'…'

Question: Should 'deaf-friendly' be 'deaf-friendly'? I'm not sure.

Wayfinding is one word. (p. B9)

Can you get rid of the blank page B10?

C19 'submitted to the al Commission (THC)'; Assuming this means 'submitted to the Texas Historical Commission'

I stopped trying to see any usage errors and started re-reading for content.

1. I am VERY impressed with the architects' understanding, explanation, and application of Deaf space throughout the project.

2. Although I know this may not be an architectural issue, I want to ensure that we are moving forward with age-appropriate classrooms/continuum of services in mind. I know the zoning is a big part of the plan, and I like that, but I'm talking about making sure that there's (as soon as is feasible) no longer a Special Needs 'wing'.

3. Did I miss any Deaf space improvements to the Health Center and Cafeteria? (I admit, I was reading quickly.)

4. ANY way to reconfigure the secondary library to reduce/remove the number of (stupid) sight-obscuring columns?

5. I like the addition of rainwater recovery systems and paving that will be permeable. Any way to incorporate solar panels to generate part of our energy? Even with the second plant or just to store backup so we don't have to buy so much from Austin Energy?

6. Like [name omitted], I think some of the landscaping issues could be dealt with earlier than later, particularly if (smaller) trees were placed in movable planters. And PLEASE avoid planting more cedars, junipers, or cypress here. Red oaks are lovely. Elms, fine. Midsize - Redbuds are gorgeous. All groundcovers (in particular) need to be highly drought resistant. I like the idea of Buffalo Grass.

I've had several folks ask me why a summary of this hadn't been posted in ASL on the website. They suggested having the Phase One map or each of the pretty elevation photos on greenscreen with someone ([name omitted] comes to mind) signing a summary of the proposed changes."

"Your master plan is well structured and logical. What was important to me as a Deaf teacher and future deaf 'parent' is the Deaf-Space and Deaf-Friendly with interior and exterior design at TSD. I appreciate the details with deaf-space and toddler center. I sincerely hope TSD team who is responsible to execute the master plan is considering to include day care to work with toddler center especially if TSD want to keep the teachers on campus without losing teachers who contribute a lot to TSD.

Comments Continued

Another feedback for TSD master plan team to consider is ensure that mold issue doesn't happen. I am noticing myself and other employees rising issue with allergies. I am seeing your future landscape plans and unfortunately, Texas is a huge problem with cedar , mold, and mildew. I highly encourage do not plant cedar trees and remove cedar trees to prevent future allergies. Please be more considerate of environment impact outside and inside of TSD especially with the latest mold issues inside the building if you decide not to renovate certain building."

"They look good! From what I see, I think it's kinda overkill with trees all over the campus. It looks kinda crowded. Maybe that's just me but looks like maybe too many trees overcrowding some areas. Yeah, we MUST have turf for our football field and maybe softball field, too. Less maintenance and all. Happy that you are considering 8-lane track, NOT 6-lane. That'd be a smart move."

"As for the new transitional building, will there be an office for the staff to use? Supposedly if a policeman stop by and want to talk to Supervisor and Residential staff in private place.. that is something we need to think about.. because at the old Transitional Apartment, there was no office at all because for years, we didn't had residential staff for it until in the year of 2000's. Thanks"

"1.) Agree, Central Admin. space and additional parking should definitely be part of Phase 1 2.) If at all possible, item 3-A should be bumped up to Phase 2 (perhaps moving a Phase 2 item to Phase 3). It is imperative that we have the academic space to address our long overdue continuum of services."

"We really more parking added. Not sure if the ones proposed are enough."

"I am please to see the research, the time it took to gather the data, and the input of staff, students, and parents were considered. I am please to see the committee look at historical factors as well as smart deaf space. It will be a joy to grow with TSD in this process of creating flowing and unified campus. I look forward to the project."

"I am very excited about the campus master plan. That is a great idea. I can't wait to see some new things on the campus. I am glad that TSD is still running for Deaf students."

"Need remove stairs campus prevent students fall and wheelchair neef flat floor also vision impaired safe"

"I only have two questions. It is not clear to me when the Central Plant is expected to reach capacity during the renovations. Is this plan flexible enough to accommodate moving the second Central Plant up if needed?

Page 45 addresses the need for a second electrical primary feed. Where will that be located?
Overall this is an excellent plan, seems everything has been taken into consideration. "

"Something to consider.....In Phase 3 - it shows the Elementary Audiology area is to become an academic area. The cost to move the sound booth is high. Also - if I am remembering correctly- when the booth was moved to this location - we were told that this booth couldn't be moved again. A new booth would cost a lot."

"The Master Plan for TSD is beautiful, carefully planned and well written. Stakeholder input was valued and included throughout the development of this plan, which was truly a community effort. This plan and related research will be valuable to TSD, TFC, and the Legislature for many years. It is unfortunate that funding is uncertain for each phase of this plan, however, I look forward to next steps and seeing the TSD Master Plan implemented. Appreciate everyone's hard work on this plan!"

"The TSD Master Plan is very well planned and thought out. TFC did a great job of working with all the TSD stakeholders to find out what they needed and wanted to improve their learning and living environment. It's a very thorough and beautiful document. I really enjoyed reading about the history."