

CAMPUS SITE DEVELOPMENT PLAN 2008–2050



Final Submission - 01 June 2010

PWP LANDSCAPE ARCHITECTURE

739 Allston Way
Berkeley, California
510.849.9494

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ACKNOWLEDGEMENTS

The Campus Site Development Plan is the product by many that have worked with us over the last 2 years. Thank you to all the students, faculty, staff, the City of Richardson, and community members who took time to attend the meetings and workshops, and provided their valuable comments.

Mrs. Eugene McDermott
Patron

The University of Texas at Dallas
David E. Daniel
President

Judy Snellings
Executive Associate to President

Dr. B. Hobson Wildenthal
Executive Vice President and Provost

Margaret Kilbourn
Special Assistant to the Provost

Dr. Calvin Jamison
Vice President for Business Affairs

Lynn Butler
Administrative Assistant III

Jody Nelsen
Associate Vice President for Business Affairs

Richard M. Dempsey, P.E.
Associate Vice President for Facilities Management

Carol Lanham
Administrative Assistant II

Dr. Darrelene Rachavong
Vice President for Student Affairs

George D. "Sam" Eicke
Facility Services Assistant Director

Jay Jascott
Landscape Supervisor

UT System

Thomas P. Lund, AIA
OFPC Senior Project Manager UTD

Pat Lee
Administrative Assistant

Jerry Salcher
OFPC Regional Program Manager North Texas

Charles R. Chaumont
Senior Landscape Architect

City of Richardson
Bill Keffler
City Manager

Dan Johnson
Deputy City Manager

Michael Massey
Director of Parks and Recreation

John Webb
Director of Development Services

Dave Carter, P.E.
*Assistant Director of Development Services,
Traffic and Transportation*



SIGN OFFS

Approval:

David E. Daniel
President
The University of Texas at Dallas

Date: Jan. 27, 2011
Signature: [Signature]

Recommended for Approval:

Dr. B. Hobson Wildenthal
Executive Vice President and Provost
The University of Texas at Dallas

Date: Jan 7, 2011
Signature: [Signature]

Dr. Calvin D. Jamison
Vice President for Business Affairs

Date: 01.05.11
Signature: [Signature]

Richard M. Dempsey, P.E.
Associate Vice President for Facilities Management
The University of Texas at Dallas

Date: Jan 5, 2011
Signature: [Signature]

CHAPTER 1

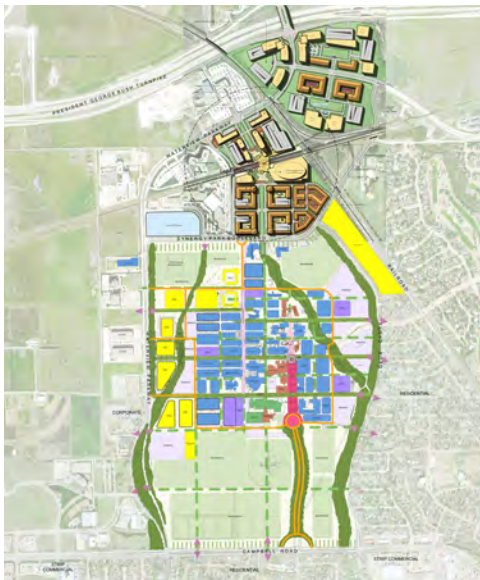
EXECUTIVE SUMMARY



University Parkway and Drive A – looking north into the heart of the campus



Harvard yard

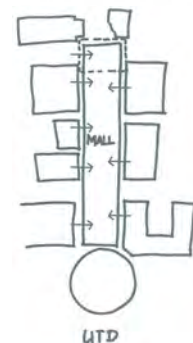
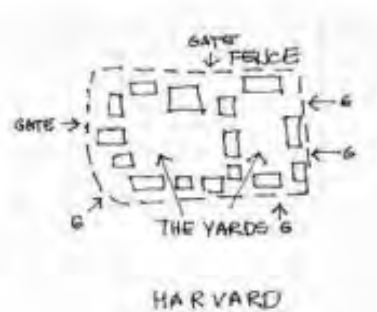
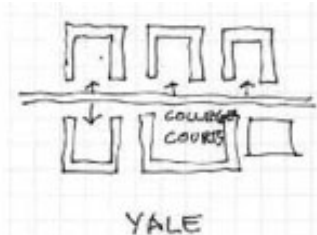


Masterplan 2050

The University's Vision and Goals

The University of Texas at Dallas has completed a strategic plan to propel the university into the top tier of nationally recognized universities. The strategic plan outlines specific actions and funding needed to achieve the stated goals of attracting top talent, both in faculty and students, and producing research which makes significant global contributions to advancing its academic disciplines.

As the University embarks upon this endeavor to become a top rank research institution, it offers the opportunity to re-evaluate the campus's physical environment in relation to its future vision. One commonality among the nation's leading academic institutions is a built environment which not only serves the functional needs of its students, faculty and staff, but is also iconic. Universities, such as Harvard, MIT and Yale, have a campus organization that is clear, ordered and memorable. The UTD Landscape Site Development Plan is an opportunity to rectify the original physical design of the campus so that the built environment supports and is commensurate with its future achievements and growing reputation.



Napkin sketches



The University has identified five goals to achieve its vision of becoming a top-tier research institution and the physical design of the campus is a critical factor in achieving these goals.

Goal 1: To be a first-rank public research university with focused centers of excellence, prepared to meet the challenges of a rapidly changing, technology-driven global society

A first-rank public research university must have not only superior building and technological infrastructure to support cutting-edge research, but physical spaces that act as a catalyst for productive interaction and collaboration.



Goal 2: To be a global force in innovative, transdisciplinary research and education in emerging areas of technology, science, and learning

The seeds of innovative research are often found in the cross-disciplinary exchange of ideas among the top minds of academia. The physical design of a campus, both in architecture and open space, must provide opportunities for this exchange, both with formal meeting and congregation areas and informal architectural and landscape spaces, for serendipitous chance meetings.



Goal 3: To be a ground-breaking leader in both framing and answering the questions faced by business, policy makers, healthcare, and the public



Goal 4: To be a synergistic partner with local industry, government, and cultural organizations as well as local K-12 schools, community colleges, and universities

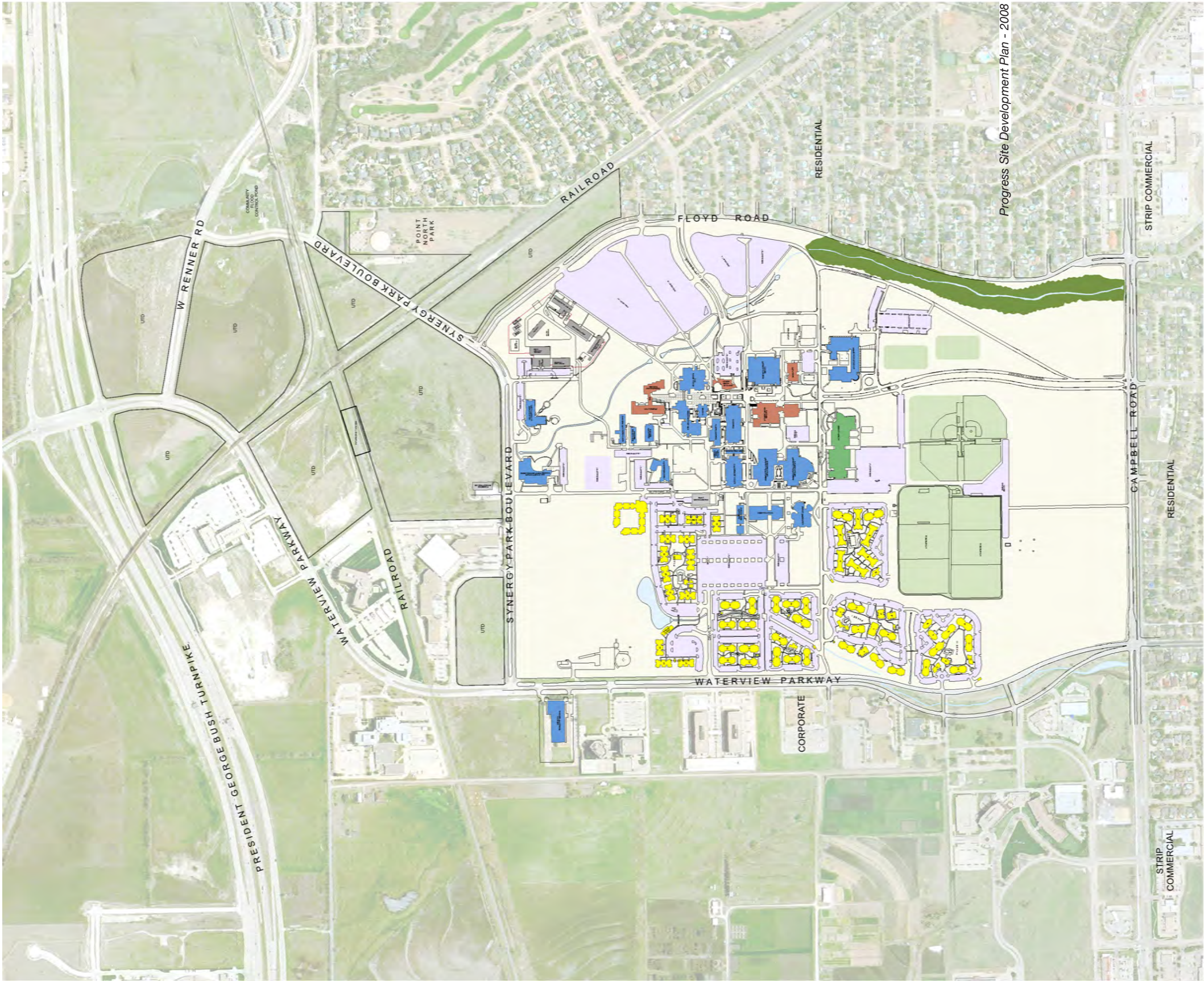
UTD recognizes that the excellence of an academic institution goes hand-in-hand with the growth and vitality of the region in which it resides. To that end, UTD strives to unite with the local and regional community and the UTD campus will serve as its forum.



Goal 5: To be one of the most creative, innovative universities in the nation and world.

A leading university is greater than the sum of its achievements; it is a physical setting which provides opportunity for the churning of ideas between its faculty and students and with the greater community at large. A great campus is a necessary component and companion to a great university.

Outdoor student activities



CAMPUS
THE UNIVERSITY OF TEXAS AT DALLAS
Progress Masterplan - 2008
UT System Project # 302-244 - UTD Landscape Enhancement Project
Peter Walker and Partners
January 15, 2008
Scale (1" = 250')

- ACADEMIC
- STUDENT LIFE / ADMINISTRATION
- RECREATION
- HOUSING
- PARKING
- MAIL
- LOOP ROAD
- EVENT AND CONFERENCE CENTER
- RESEARCH AND DEVELOPMENT
- SERVICE / FACILITIES

THOUGH MANY BUILDINGS
CONTAIN MORE THAN
ONE PROGRAM ELEMENT,
COLORS HAVE BEEN
ASSIGNED ACCORDING
TO MAJORITY USE.

2008



Landmark trees



Open prairie and big sky



Existing empty spaces



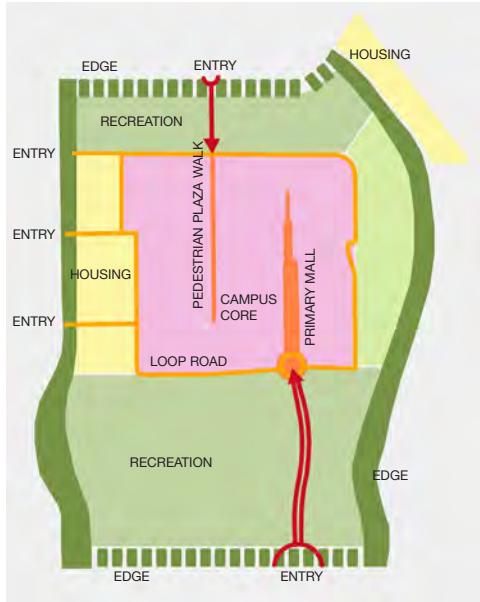
Existing Large size surface parking

Existing Condition and Regional Context

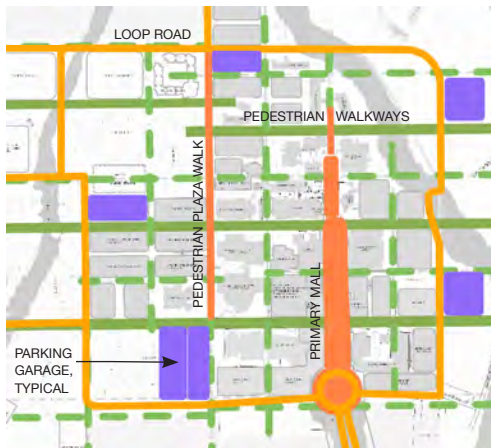
The condition of the physical environment at UTD is at odds with its goals of achievement, recognition and excellence. Although prior master plans have identified areas for specific building construction, all have lacked a clear diagram or “gesture” that would guide development over time. As a result, the campus today lacks a clear and governing order to guide future development. There is no strong hierarchical relationship between the various areas on campus which would demarcate areas of importance from regular areas. The early years of the campus was commuter focused. This car-oriented design has resulted in a lack of outdoor public space which is comfortable and inviting—spaces which could extend the classroom environment and encourage the informal exchange of ideas. UTD is now in transition to a “live-in” Campus environment.

The university’s lands have great potential to become an inspirational and beautiful campus. The regional context of Dallas/ Ft. Worth in which the campus resides is dynamic, prospering and innovative. The region has a need for academic institutions to incubate innovative ideas and train local talent. The region is also known for its technology industries and the university’s programs benefit from the proximity to these industries. Plans for expansion of the Dallas Area Rapid Transit system to the UTD campus will further link the campus to the greater region and spark development on the campus’s northern boundary.

Within this dynamic regional context, the UTD site is also home to a unique and beautiful regional ecology. Large, majestic oak and pecan trees, gently rolling prairie and dramatic skies all characterize the beautiful environmental qualities of the Dallas region. With the reassessment of the campus’s plan comes the opportunity to preserve one of its most important resources: open space. The open space on the north and south of the UTD campus have the potential of becoming a powerful and iconic symbol of the region’s natural heritage.



Site Development Plan concept



Campus core concept

The Campus Site Development Plan

The Campus Landscape Site Development Plan will establish a framework for future development that considers the university's goals of growth and achievement; the dynamic regional socioeconomic climate; and the unique environmental resources. The proposals found within the Plan will create a campus organization that is well-balanced, memorable and iconic.

The Plan will organize arrival and circulation through campus by the introduction of a hierarchy of entries and a primary "loop" road. The campus entries at the north and south will be the primary gateways to campus. These entries will be more formal in treatment and be the "front door" to the university. A secondary system of entries will be found on the west side of campus. These entries will accommodate the more daily traffic that arrives on campus. All of these entries will lead to a newly created loop road. Along the loop road, the Plan proposes a system of structured parking garages that will replace the massive surface parking lots.

The loop road will encircle the campus core which will become the center of gravity of the campus--the social and academic heart of UTD. The campus core will build upon existing landscape elements as well as introduce new ones. The campus core will consist of two significant pedestrian zones. The two pedestrian only zones running north/south will provide a fabric of open space that will link the other areas within the campus core. These zones will be more formally organized with strong architectural edges. The creation of comfortable and inviting pedestrian spaces linked to the pedestrian walkway system will be an important element that is missing from the campus today.

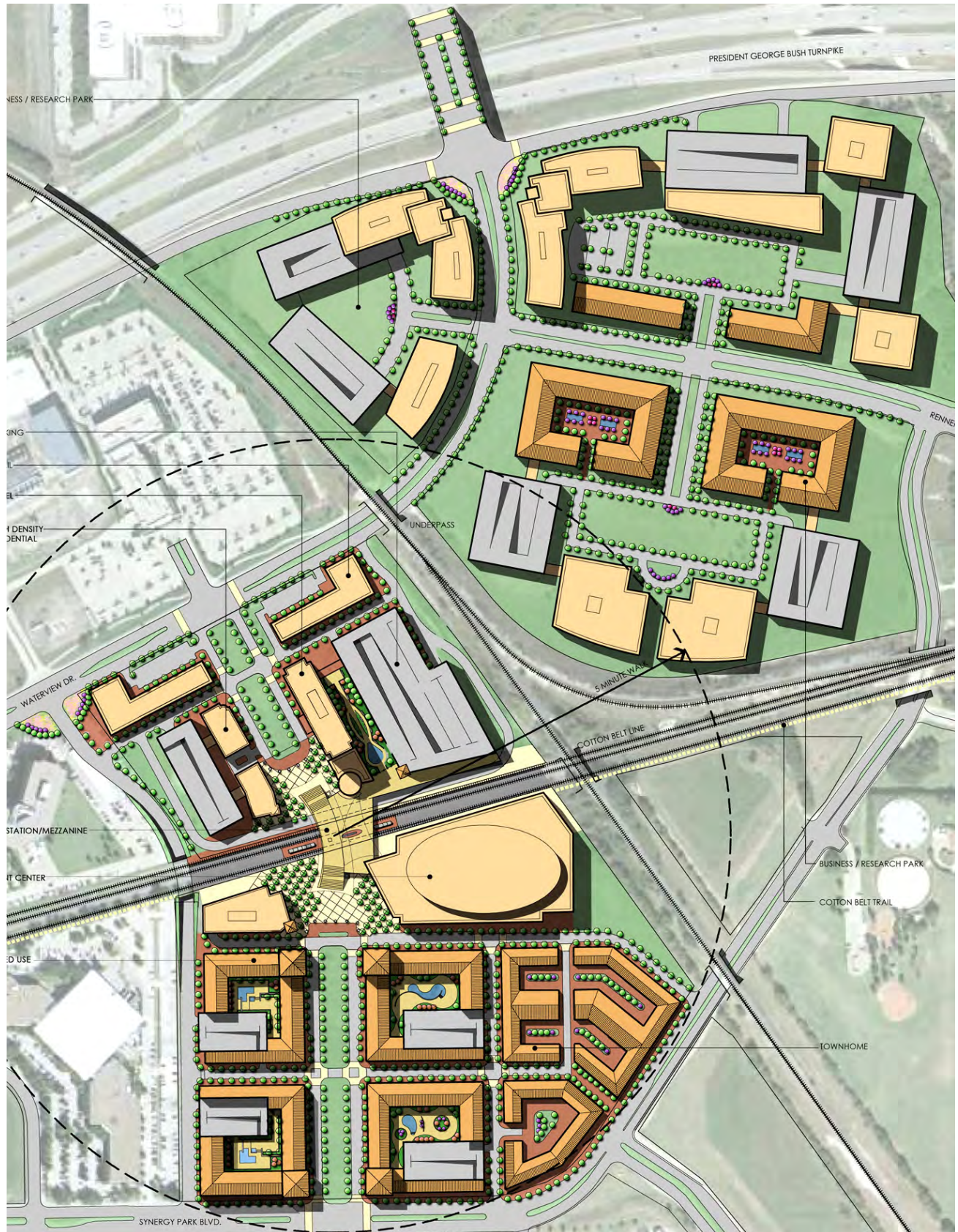
The natural resources of the campus will also be preserved and enhanced within the proposals of the Campus Landscape Site Development Plan. The fields at the north and south boundaries of the campus will be preserved for not only their social value but as visual symbols of the region's natural heritage. The two drainage ways are proposed to be revegetated with native trees and understory planting. It is also proposed that the concrete water channels be returned to a more naturalistic shape and material. These green corridors will become quiet places on campus that will be an equal counterpart to the density and activity of the campus core and sports fields.





Current Planing Concept of UTD North Campus with DART station -June 11, 2009

NOTE:
 SOUTH OF SYNERGY THE CAMPUS SITE DEVELOPMENT PLAN SUPERSEDES THIS GRAPHIC



Enlargement of current Planing Concept of UTD North Campus with DART station -June 11, 2009

Chapter 2

INTRODUCTION



Existing layout of buildings



Existing surface parking

Purpose and Scope

The University of Texas at Dallas has experienced dynamic change in student enrollment over the last few decades. In the last ten years alone, UTD has seen an unprecedented 56% increase in student enrollment which is in part due to the growth in undergraduate enrollment, a student group which represents nearly 70% of the student body. The expansion in student enrollment is also reflective of the expansion of the Dallas/Ft. Worth region, which is experiencing a high rate of growth and urbanization.

The University has completed a strategic plan to guide its future vision and propel the university into the top tier of nationally recognized universities. As the University embarks upon this endeavor to become a first rank public academic institution, it offers the opportunity to re-evaluate the campus's physical environment in relation to its future vision and continued growth.

The physical environment of the UTD campus today is at odds with its goals of growth and national recognition. Currently, academic buildings are loosely congregated near the center of campus; other building facilities dot the campus in various locations in an unordered fashion. The buildings are sited in deference to a vehicular circulation and parking system; vast fields of surface parking occupy a large amount of land on the campus. The pedestrian circulation system is typically found on the margins of the vehicular street grid; pedestrian walkways are often directly adjacent to roadways in a setting designed for the priorities of vehicles rather than pedestrians. Social gathering spaces are uncomfortable and often empty.

The purpose of the Landscape Site Development Plan is to define a landscape-based framework of streets, parking areas, pedestrian walkways and outdoor gathering areas; within this framework, future buildings are identified to compose a cohesive and ordered university campus. This landscape framework will accommodate future physical development, campus expansion, and open space preservation vis-à-vis the goals of becoming a top-tier public research university.

The University of Texas at Dallas
STRATEGIC PLAN
2008

CONTEMPORARY CAMPUS
PLANNING OBJECTIVES

OBJECTIVES:

Initiative #2:
"Preparing Students For Tomorrow's Challenges"

Initiative #3:
"Managing Change In A Constantly Changing Society"

Initiative #4:
"Securing The Safety Of The Future"

Initiative #5:
"Improving The Health And Quality
Of Life Of Individuals And Society"

Initiative #6:
"Making A Great City Even Greater"

OBJECTIVES:

Enduring Identity Of Place

Strong Environmental Character

Sustainable Infrastructure

Supportive And Healthy Academic Environments

Vital Community Relationships



Rather than being driven by an architectural facility program, the Landscape Site Development Plan will provide the framework in which future buildings will be added in a manner that considers the entire canvas of the university campus.

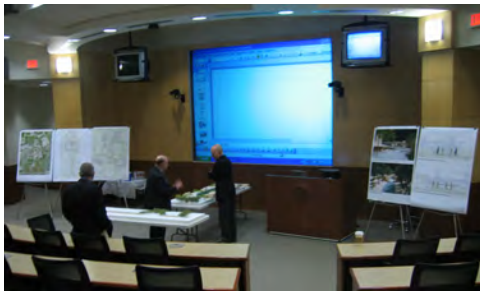
Project Boundaries

The main area of campus is bounded by four major arterials: Synergy Park Boulevard on the north; Waterview Parkway on the west; West Campbell Road on the south; and North Floyd Road on the east. In addition to the main campus area, the University also owns some outlying pieces on the north divided by railroads and public rights-of-way. (see site map on page 13).



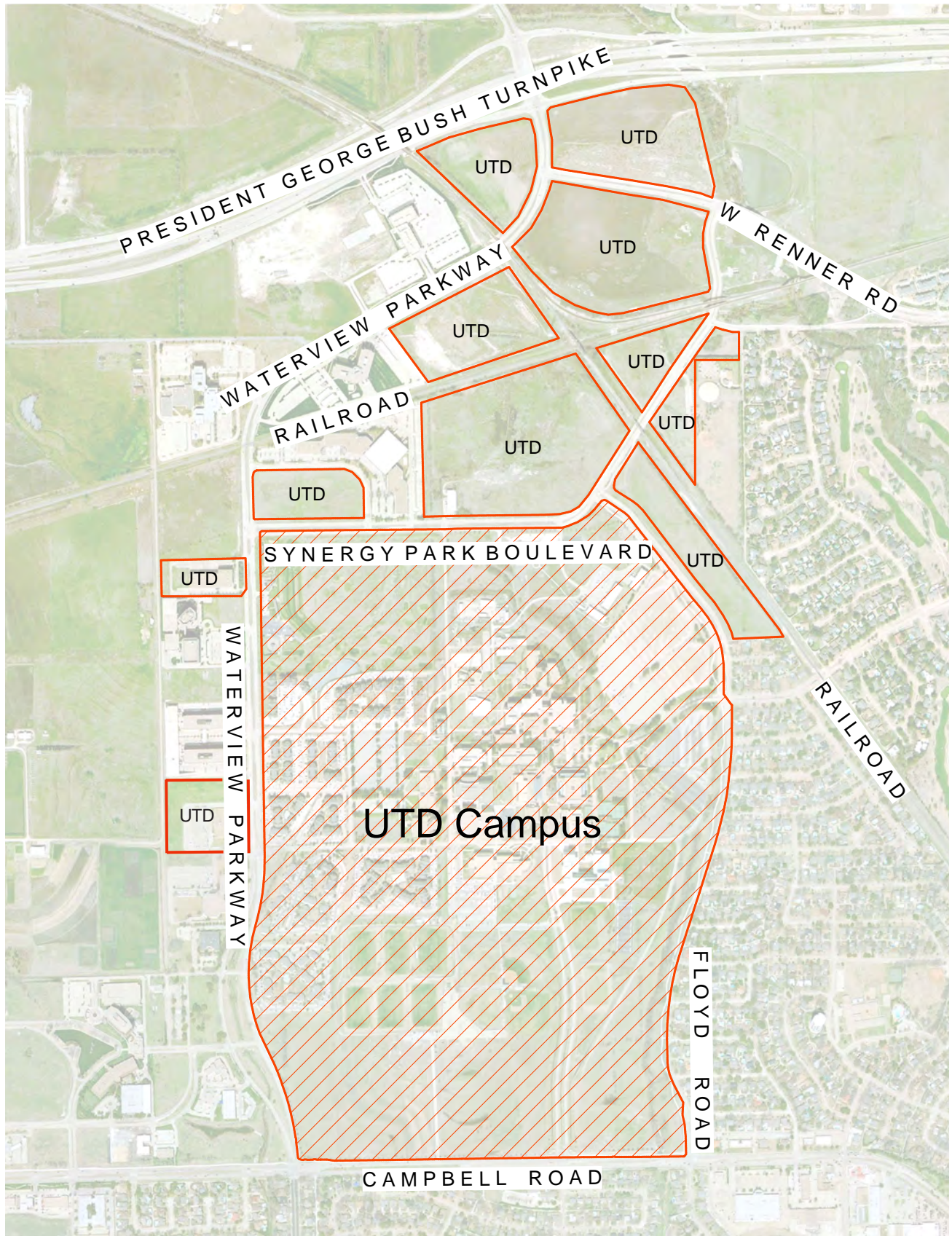
Planning Process

The Campus Landscape Site Development Plan was formulated with input and consultation with many stakeholders in the UTD community, including students, faculty and staff as well as members of the surrounding community. The consultant team led a preliminary process of gathering information on the existing physical campus design through site observations and conducted parking surveys and traffic counts.



Public presentations provided an opportunity for students, faculty, staff and community members to express their ideas and to shape the concept of the master plan

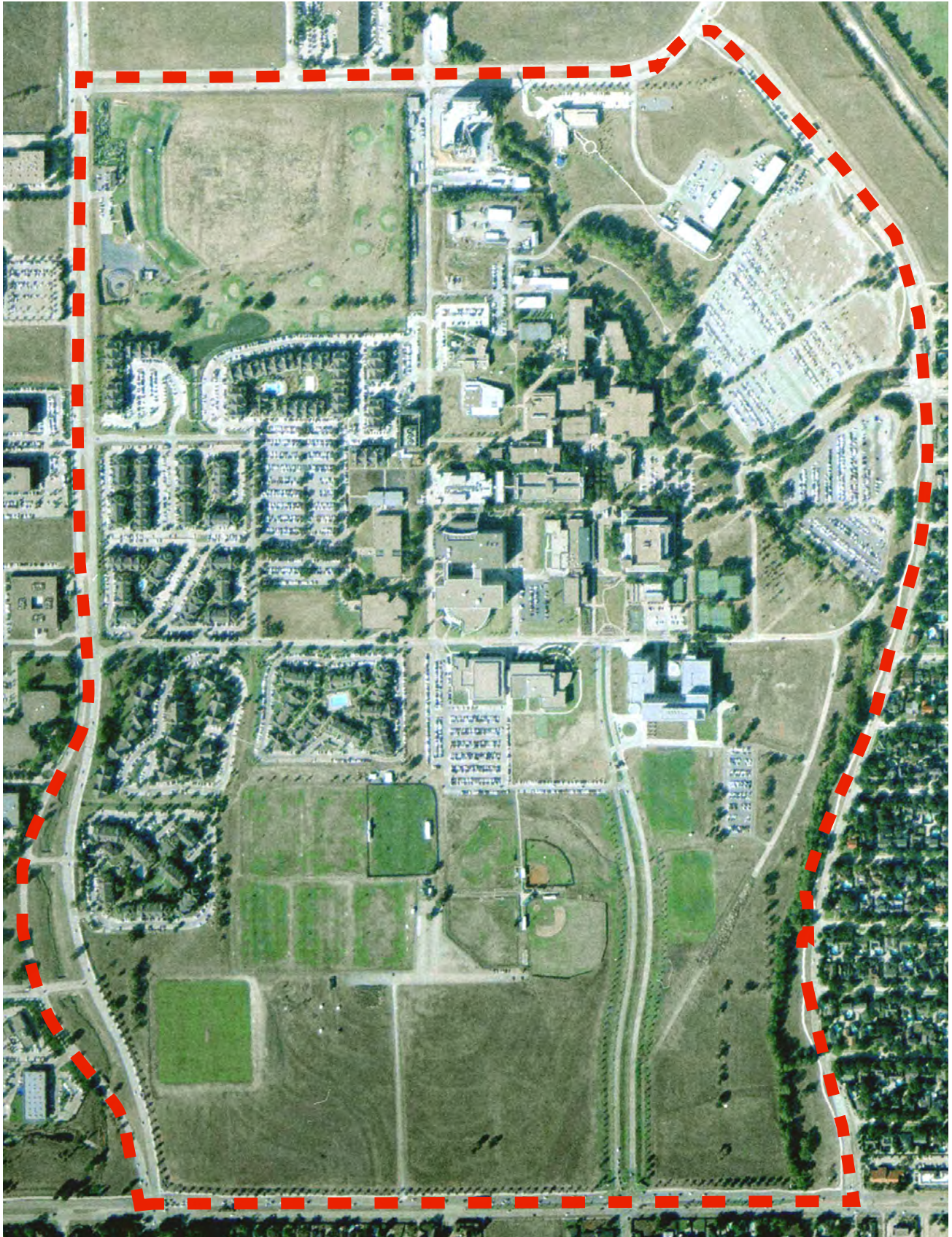
The team studied prior planning documents, including the 1971, 1994 and 2002 Campus Master Plan Updates. The team also studied the UT Dallas Strategic Plan to understand the long-term vision for growth on the campus and the corresponding need for improved and/or additional research, classroom and housing facilities.



Project boundary

Chapter 3

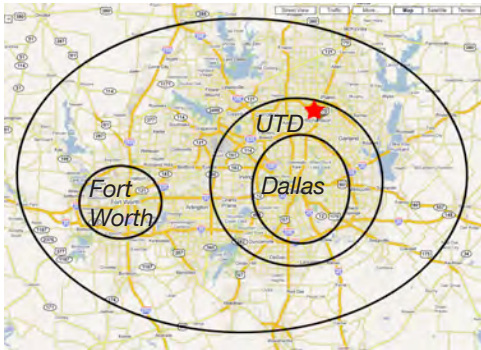
ANALYSIS / INVENTORY



Site Aerial 2006



Dallas downtown skyline – DFW Metroplex is the nation's 9th largest metropolitan area



Dallas Fort Worth Metroplex



Map

Location in Dallas / Richardson

The University of Texas at Dallas campus is located approximately 17 miles north of central Dallas in the city of Richardson. Formerly an outlying area of Dallas dominated by cotton fields, today the City of Richardson is comprised of both technology industries and residential development. The city is part of the Dallas/Ft. Worth Metroplex which is home to a number of university campuses and large corporations. The region is best known for being the birthplace of Texas Instruments whose founders were the early patrons of the university.

The UTD campus is located near the intersection of North Central Expressway (US-75) and President George Bush Turnpike. This location allows the campus to be linked to the Metroplex by the network of freeways and interstates that traverse the region.

The Dallas/Ft. Worth Metroplex has experienced a consistent rate of growth as documented by the US Census Bureau, including an 18% growth in population from 1990 to 2000. The population is forecasted to continue growing which, in turn, is expected to increase demand for the academic programs at UTD.



Blackland Prairie



Pecan



The Trinity River watershed



The big sky: Drive A looking south

Regional Landscape Context

The regional ecology and weather are significant factors in the design of the open space at UTD. The campus has the ecological qualities to support a richly vegetated and landscaped campus. The site properties are typical of the Blackland Prairie – rich, naturally fertile soil which supports tall grass prairie vegetation with Oaks and Pecan trees at waterways and low-lying areas.

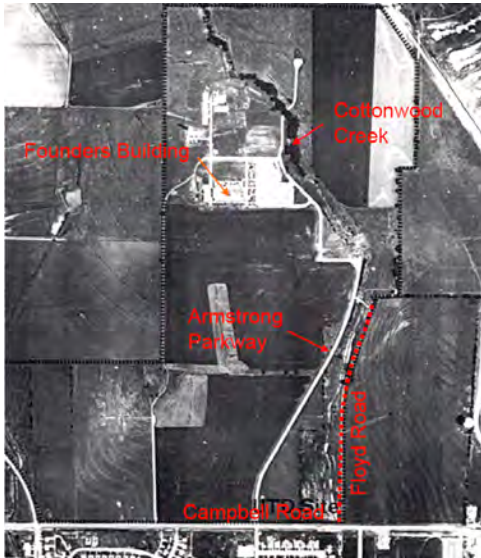
The region is known for its humid climate (Zone 8b) which results in temperatures ranging in the 50s to low-100s with humidity in the hottest summer months. The majority of rainfall in the Dallas region is experienced in the spring with the arrival of large thunderstorms.

The regional flat topography is similar to the topography found on the UTD campus and influences the path of stormwater drainage. In general, the UTD site slopes very gently to the south boundary of campus. Stormwater is conveyed to stormwater inlets and the two drainage basins which flow through campus. The campus lies within the greater watershed of the Trinity River which has experienced a high rate of pollution from agricultural and industrial runoff. As the UTD campus begins to densify, consideration should be given to providing methods of minimizing the harmful impact to the Trinity River watershed (see “Sustainability” in Chapter 8).

The region’s flat topography contributes to one of its most significant environmental qualities—the unique vantage of the open, expansive sky juxtaposed against the level horizon. This “big sky” becomes the canvas for dramatic cloud formations and is a beautiful phenomenon particular to the region.



UTD Founders



Aerial of Southwest Center for Advanced Studies, 1961-1968

Site and Campus History

The UTD campus began as a research facility founded in the 1960s by Eugene McDermott, Cecil Green and J. Erik Jonsson. The facility, named the Graduate Research Center of the Southwest, was created to educate and train top talent from the Dallas Metroplex region in order to reduce the need for recruiting and relocating talent from other states. Later renamed the Southwest Center for Advanced Studies, the founders ultimately donated the facility, along with its land holdings, to the State of Texas in 1969 to form the University of Texas at Dallas. The University, with support from the region's private computer technology industry, became a leader in electrical engineering and computer science. The campus originally offered only graduate levels degrees; upper division coursework and undergraduate degrees began to be offered in 1975. In 1990 lower division coursework began to be offered and undergraduate students were admitted as freshman.

Over the history of the university, iterations of a campus master plan have been completed to guide and direct the growth of the campus. The first plan, completed in 1971 by The Oglesby Group, took the original buildings inherited from the Southwest Center for Advanced Studies, including the Founder's Building, and devised a plan for future building construction. This plan proposed a collection of new buildings built around a central mall, with the eastern façade of the Founders Building composing one of its edges. In addition, the plan proposed other new building sites off of the mall within a grid formation; this proposed grid composed a network of pedestrian and vehicular corridors. Although the mall element was realized, the grid formation was loosely achieved.



Campus Master Plan, 1994, Good Fulton & Farrell Architects

The campus master plan was updated in 1994 to consider the larger campus boundary. Some elements of the plan were ultimately rejected; the element that was realized and is most visible today is the formal University Parkway entry from Campbell Road.

The next campus master plan update occurred in 2002. Its intent was to prepare the campus for the anticipated rate of expansion and increase in student enrollment.

These iterations of the campus master plan sought to identify the current capacity of the campus, anticipate the future needed capacity, and design a master plan to accommodate the future needs. By designing to a fixed facility requirement, these master plans were unable to adjust to the fluctuations in facility requirements that occurred as a result of unanticipated growth.



Campus Master Plan, 2002, 3D/International, Houston



Existing campus 2006

Existing Campus Land Use

The 485-acres which compose the main UTD campus are roughly organized by an academic core, outlying fields of surface parking, garden-style student apartment housing, and sports fields on its north and south boundary.

The academic core consists of approximately 30 buildings, the largest of which include the Eugene McDermott Library, the Student Union, the Founders Buildings, the Engineering & Computer Science Building and the J. Erik Jonsson Academic Center.

The design of the physical environment on the UTD campus has been strongly influenced by the local climate conditions. Many of the campus's academic buildings are connected by a series of skywalks—fully enclosed, raised walkways that connect neighboring buildings. The skywalk allows people to travel between buildings without having to endure uncomfortable climate. The result of this insular circulation system is that the campus's outdoor spaces are often absent of pedestrians or casual gatherings.



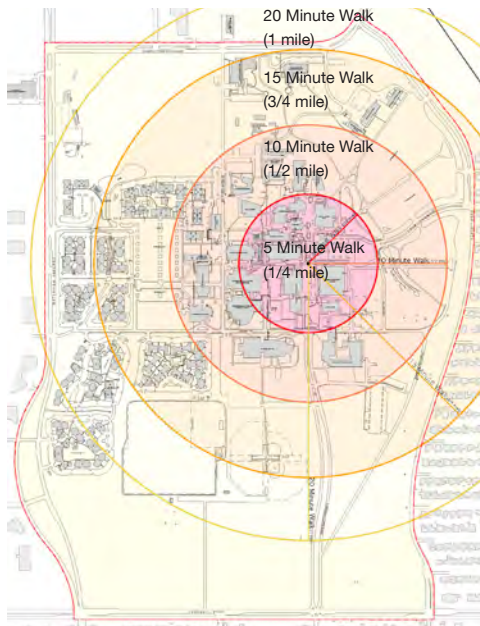
Skywalks connecting the buildings



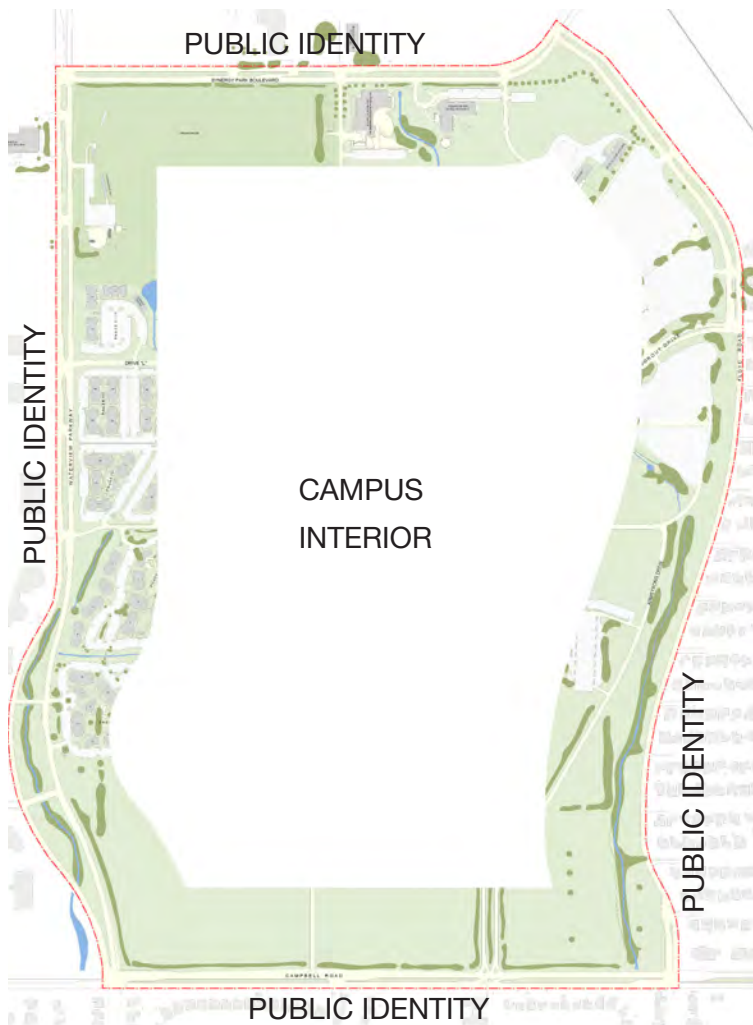
Existing circulation and parking

The dominant form of transportation on campus is the private automobile. Because of the high commuter population as well as the location of the campus apart from significant public transportation, most students and visitors travel to campus via car. On the west and east sides of the academic core are large fields of surface parking lots.

Although the private automobile is the primary form of transportation, the UTD campus is well suited to a more fully developed pedestrian circulation system due to its walkable scale and flat topography. Currently, walking on campus is not a preferred method of traversing campus and often private automobiles are used for short trips across campus. With the exception of the tree-lined area in front of the Founder's Building, many pedestrian walkways and spaces do not offer a high degree of pedestrian comfort, such as shade, character or visual interest. In fact, many pedestrian walkways are often directly adjacent to vehicular roadways with no shade or design character. Without consideration to pedestrian comfort, short walks across campus are perceived as being uncomfortable and undesirable to the pedestrian.



Proximity–5 minute pedestrian walk



Existing edge appearance of the campus

The students that do live on-campus live in low-rise, garden-style apartments located on the west side of campus along Waterview Parkway. These apartments complexes consist of multi-unit, three-story buildings organized around interior landscape areas with parking on the outer periphery.

The north and south edges of campus are largely dedicated to large open sports fields. These fields are jointly used by both the university and community population. Bounding the sports fields on the east and west are drainage channels which traverse the campus. These channels, Cottonwood Creek and the West Fork, have been primarily designed as a stormwater utility, a v-shaped engineered channel and little vegetation. In the future, this corridor has the potential of being transformed into a campus amenity by increasing the riparian vegetation and naturalizing the form of the water channel itself.

The visual quality of the campus perimeter does not indicate the presence of a large university campus. The southern edge consists of the campus's sports fields. Although this open field is visually distinctive from the strip commercial developments

and subdivisions along Campbell Road, there is no signifying element to indicate the boundary and entry into the UTD campus, other than a low wall.

The majority of UTD students commute to campus from various locations in the Dallas Metroplex area, resulting in a campus without "24-hour" life and activity. Many of the disparate outdoor social spaces are often empty and not fully utilized.



Campus edge along Campbell Road



Student Housing



University Parkway entrance



Large size surface parking



Walk towards the student housing



Drainage system without planting



Bare sunny plaza in the center



Arcade along the Student Union



Uninviting building entrance



Large hot building facades



Map



DART network is expanding and will connect in 2025 the UTD Campus.



Bus shuttle route at UTD



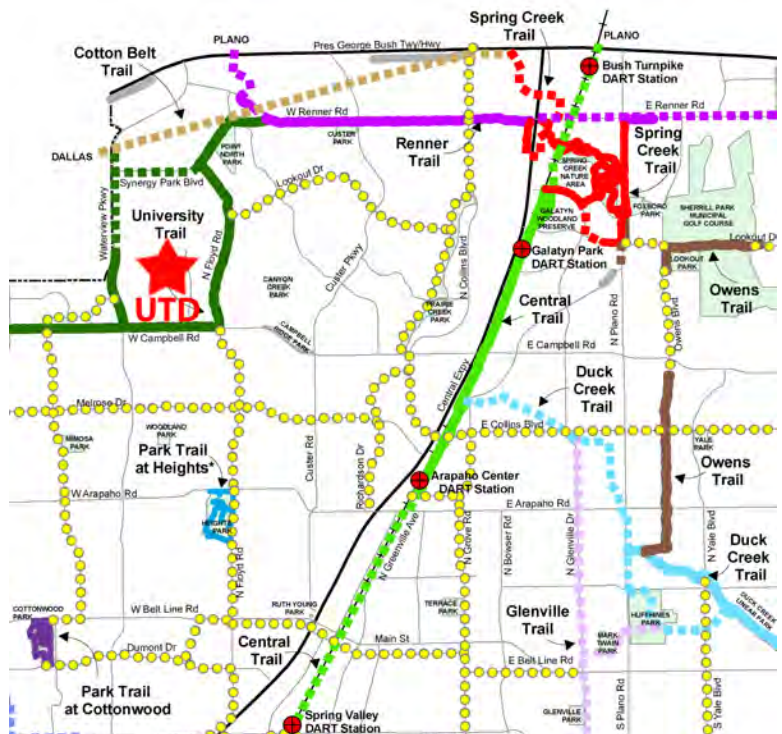
Dallas Area Rapid Transit (DART bus)

Campus Connectivity

The campus is connected to the City of Richardson and the greater Dallas Metroplex area by a system of transportation methods. Students, faculty and staff primarily arrive on campus via car and the campus's location at the intersection of the President Bush Turnpike (TX 190) and the North Central Expressway (US-75) makes it accessible from all directions, including from downtown Dallas to the south.

In cooperation with Dallas Area Rapid Transit (DART), the Transportation Services Office at the University of Texas at Dallas provides bus service free of charge to the university population and the public. The campus is currently served by Routes 883, which connects to DART Bush Turnpike Station West, and 884, which connects the UTD campus to the Collier Center, UT Southwestern and the Center for Brain Health. The campus will be serviced in the future by the expansion of the DART system; early planning efforts suggest a DART rail station to be added on the north side of campus by 2025.

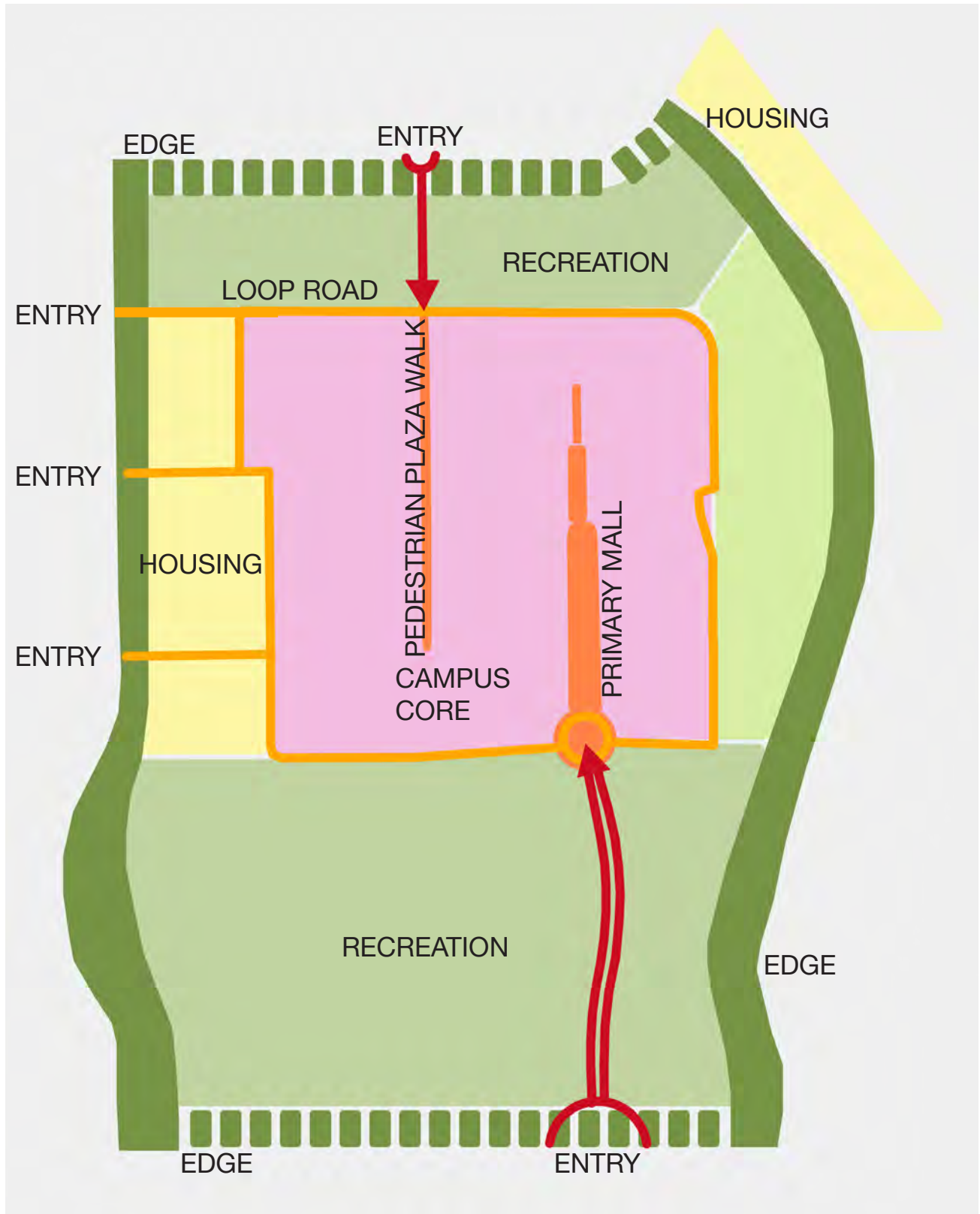
The campus is also connected to the surrounding area by a shuttle service and a network of multi-use trails. The UTD shuttle service runs from McCallum Boulevard, the campus core, and the DART Bush Turnpike Station West. The campus is connected to a network of multi-use trails maintained by the City of Richardson.



City of Richardson—trail way masterplan

Chapter 4

LANDSCAPE SITE DEVELOPMENT PLAN FRAMEWORK





Model - Entrance from Campbell Road



University Parkway first year after planting

Entrances

A hierarchy of campus entries will be provided to accommodate the various types of visitors that arrive on campus on a day-to-day basis.

Two primary entries on the north and south sides of campus will be designed to be the formal gateways to campus. These entries will be designed to be distinct and ceremonial. The southern main entry will consist of an entrance grove of thickly planted trees and shrubs, imposing a sense of compression and distinction from the surrounding busy streets and shopping areas. Moving north along the entry grove, views to the surrounding landscape will highlight the athletic fields to the east and west. The entrance grove will terminate as the space opens again at the entry circle, a large scaled circle planted in turf and surrounded with matched specimens of canopy trees. Visitors will utilize this circle for orientation and way finding and they may be dropped off at the south end of the mall. This entry will act at the formal “front-door” to the campus and would be a suitable entry for parents of students and other special visitors.

The northern entry will be another main entry to campus. This entry will have a similar half-circular entry as the southern main entry, albeit small in scale. Views to the open-space on the west and architectural elements on the east will form this northern entry corridor

Entries on the west will fulfill a more functional role in the campus entry hierarchy. These secondary entries will provide a direct route to the loop road and parking garages, and therefore be a preferred entry for commuter students and service vehicles.



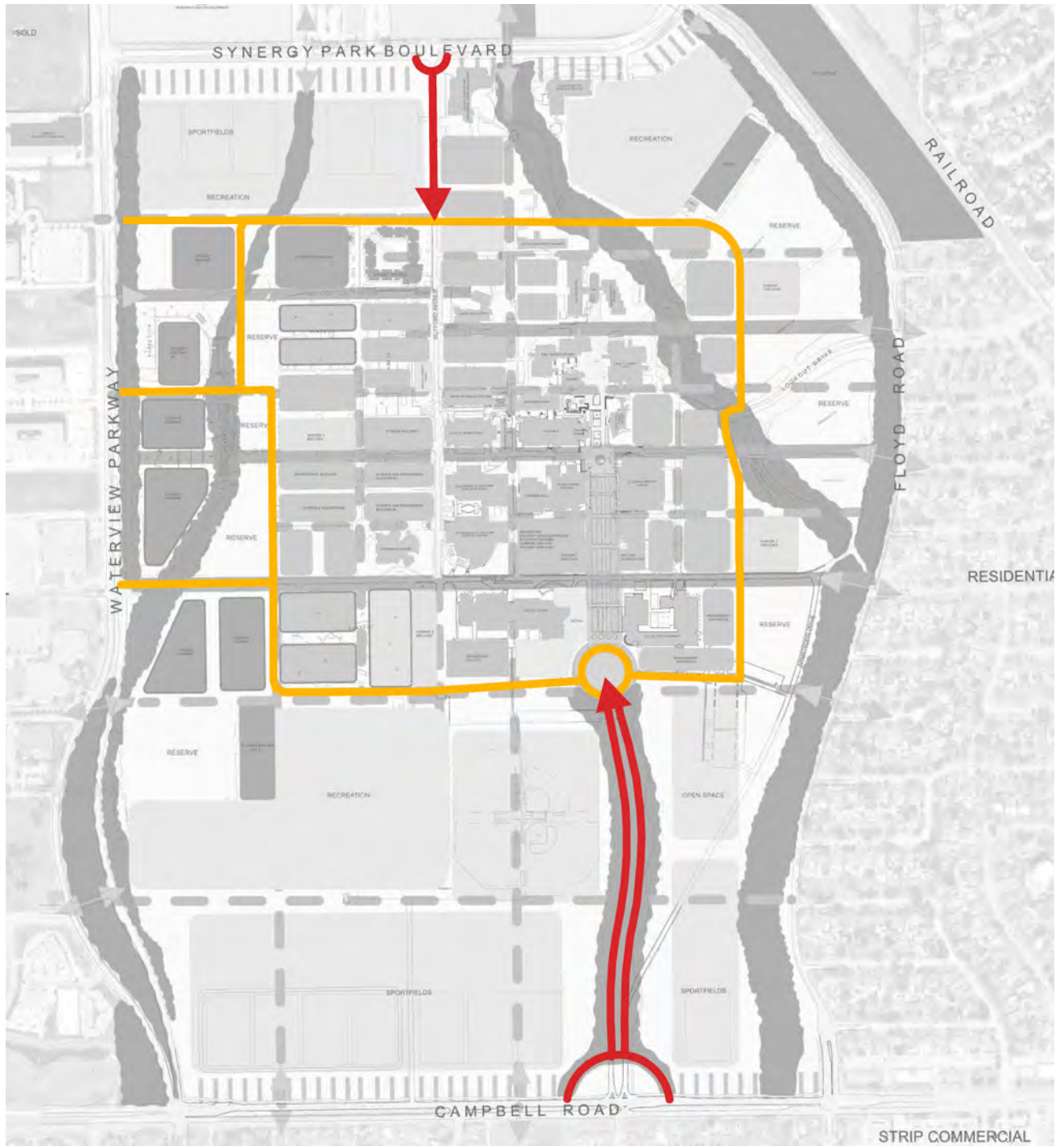
Section through the University Parkway soon after planting



Model - entrance circle from Campbell Road



Elevation - Entrance view from the south



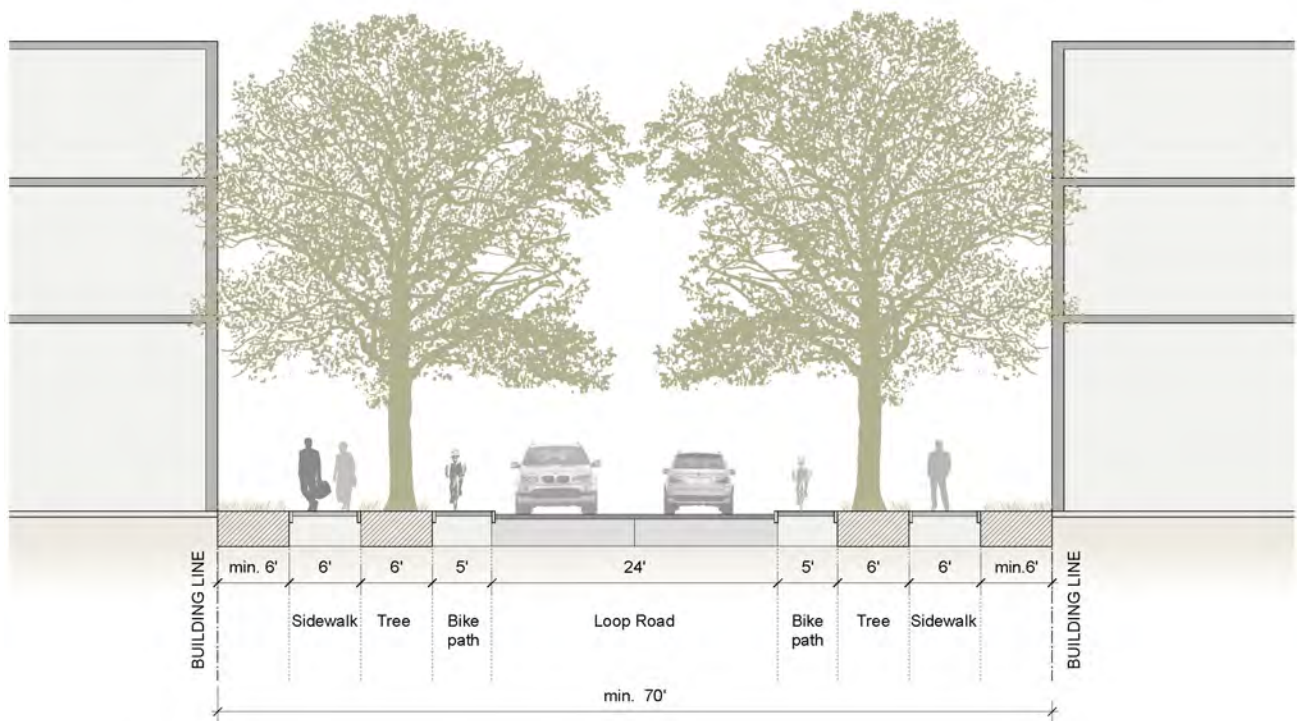
Entries and loop road



Section through the University Parkway and the entrance circle

Roads/Streets

The Landscape Site Development Plan proposes the creation of an internal campus loop road which connects to the primary and secondary entries. The loop road will encircle the campus core and demarcate the pedestrian zone on campus from the areas on campus where cars are allowed. Large, canopy trees and landscaped edges will create a comfortable and beautiful environment for pedestrians. Dedicated bike lanes in both directions of travel will accommodate cyclists.





Parking structure fit into the urban context

Parking

At key spots along the loop road, new parking garages are proposed to supplant the need for over-expansive surface parking lots. These parking garages will free up large areas of land for future open space or facility uses.

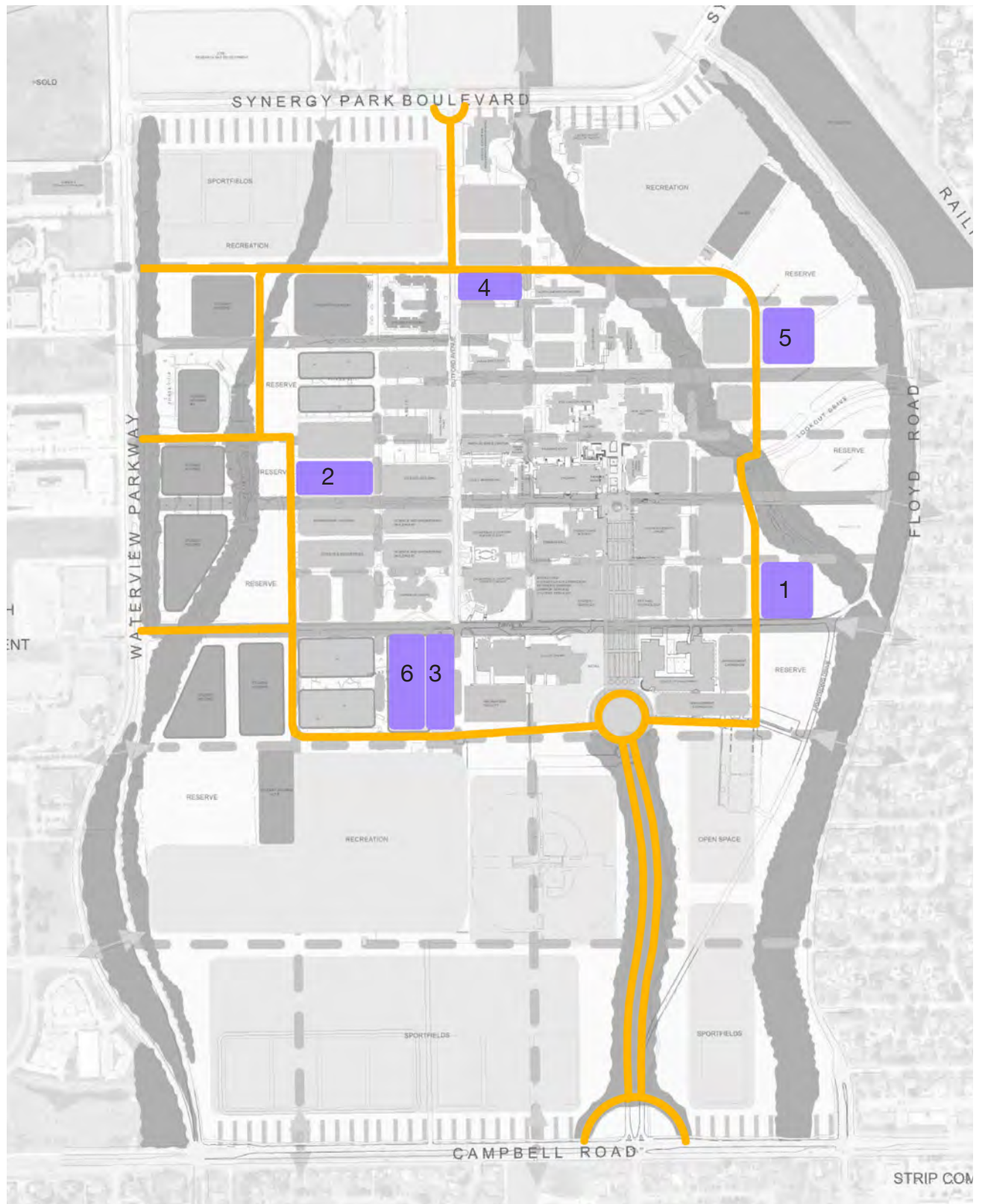
The full implementation of structured parking garages will occur over time and the surface parking lots will continue to be used for ten or more years. In the period before full realization of the structured parking garage system, the condition of the existing surface parking lots should be ameliorated to elevate the aesthetic quality of the lots as well as provide pedestrian comfort. Infilling the lots with tree planting, which could coincide with future pedestrian corridors, is one example of how surface parking lots could be improved.



Parking under a large tree canopy *Parking in hedge-pockets*



Parking lot divided by grass rows and trees *Parking lot structured by hedge rows*



Parking structures are placed along the loop road



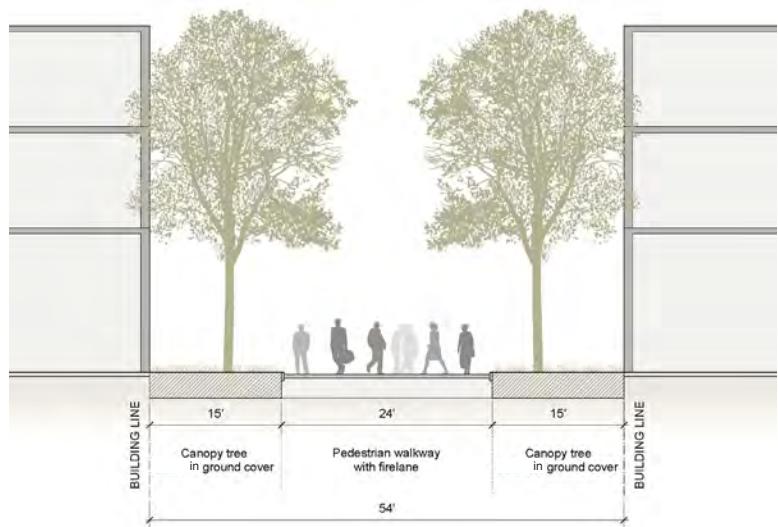
Pedestrian movement system

Pedestrians on campus will primarily originate from either student housing complexes on the east and west or from the newly proposed parking garages around the loop road. A network of landscaped pedestrian walkways running east/west will provide comfortable and shaded corridors connecting to the campus core. In addition, building upon the existing gridded pedestrian circulation provided in the campus core, the Landscape Site Development Plan proposes a secondary network of pedestrian walkways to connect to the northern and southern areas of the campus. These pedestrian corridors will build upon and strengthen the grid framework implemented in the 1974 Campus Master Plan.



Tree covered walkways

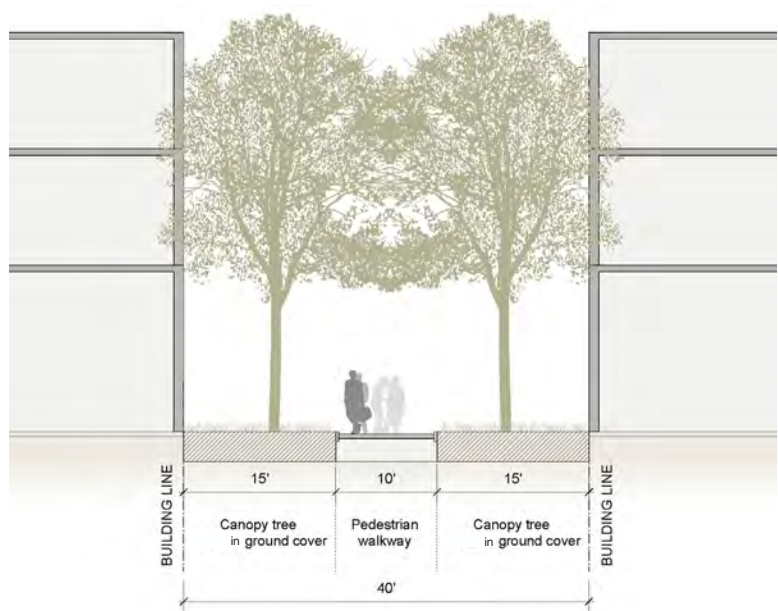
The pedestrian circulation system will create a hierarchy of walkways and paths. Primary walkways will be prominent, easily navigable corridors that link the campus on a larger scale. A secondary system of walkways will connect to campus buildings and smaller spaces.



Primary walkway which can accommodate emergency vehicles

Primary Walkways

Primary walkways which run east-west will be prominent and easily identifiable to pedestrians as major connectors on the campus. Ranging in width from 20 to 24 feet, they will be designed to comfortably accommodate a large number of pedestrians as well as emergency vehicular access. Where possible, these primary walkways shall also include landscaped edges of groundcover and canopy trees to provide a shaded respite from summer heat.



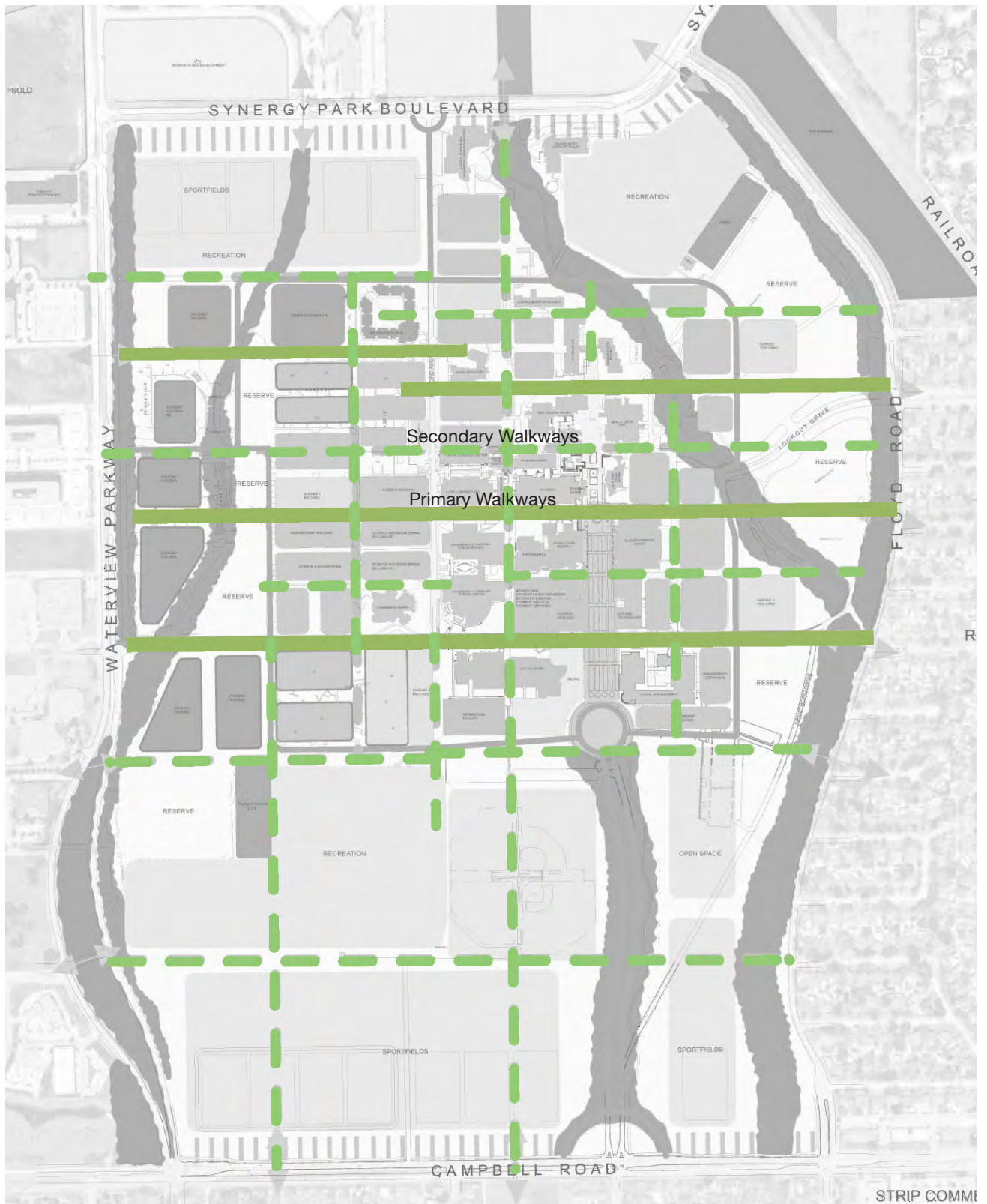
Pedestrian secondary walkway

Secondary Walkways

Secondary walkways, will be narrower in width than primary walkways but with equal attention to landscape edges and shade. Although secondary walkways will not be designed to accommodate emergency vehicular access, the paths should be wide enough to accommodate small campus maintenance vehicles.



Good example: Existing walkway south of the administration building



Pedestrian circulation system with major and minor walkways



UTD core after full build-out

The Core

The campus core will be the center of gravity of the campus – the social and academic heart of the UTD community. It will be a densely constructed zone on campus, composed of the academic and student services buildings, and will be a concentrated counterpart to the openness of the sports field on the core's periphery.

The campus core will be a pedestrian zone with limited vehicular access. The pedestrian walkways will become green arteries connecting the various areas within the core to the campus's north and south malls.

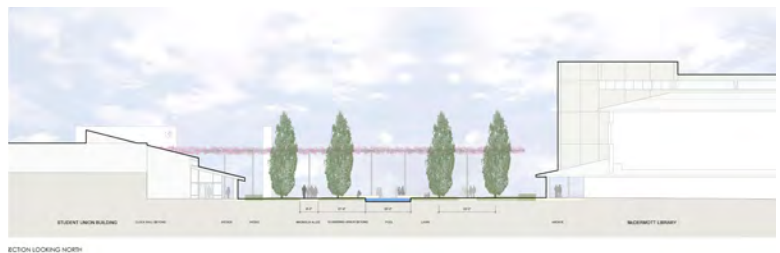
The core will be the social center of the UTD campus and exterior gathering spaces will extend the classroom experience to the outdoors. The Phase 1 landscape improvement project will make a significant contribution to the outdoor environment on the campus with the construction of special elements along the primary mall (see below). These spaces will provide a forum for student social interaction and the informal exchange of academic ideas.



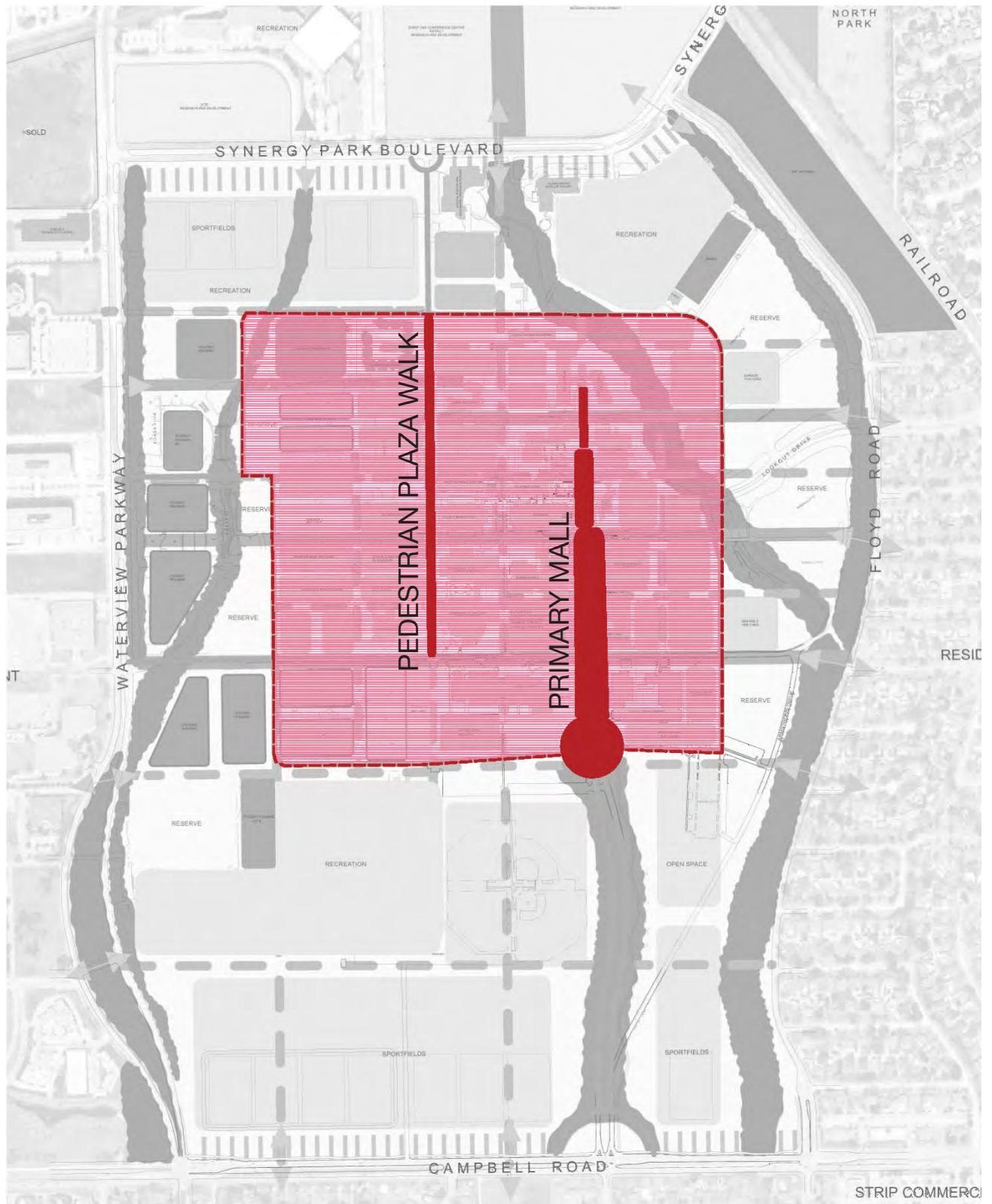
Mall looking south



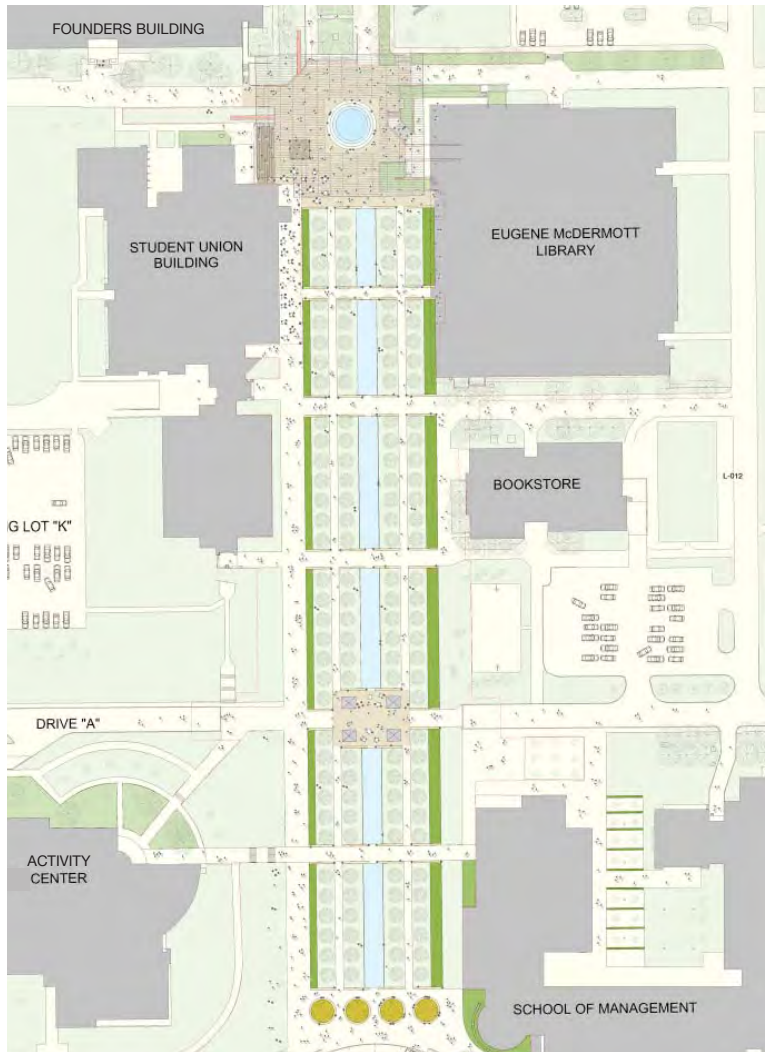
Social gathering place at Student Union



Sections through the proposed Library plaza



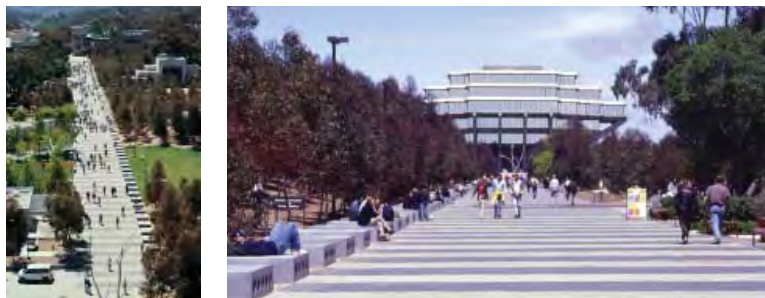
Campus core



Mall plan 2008



Mall section



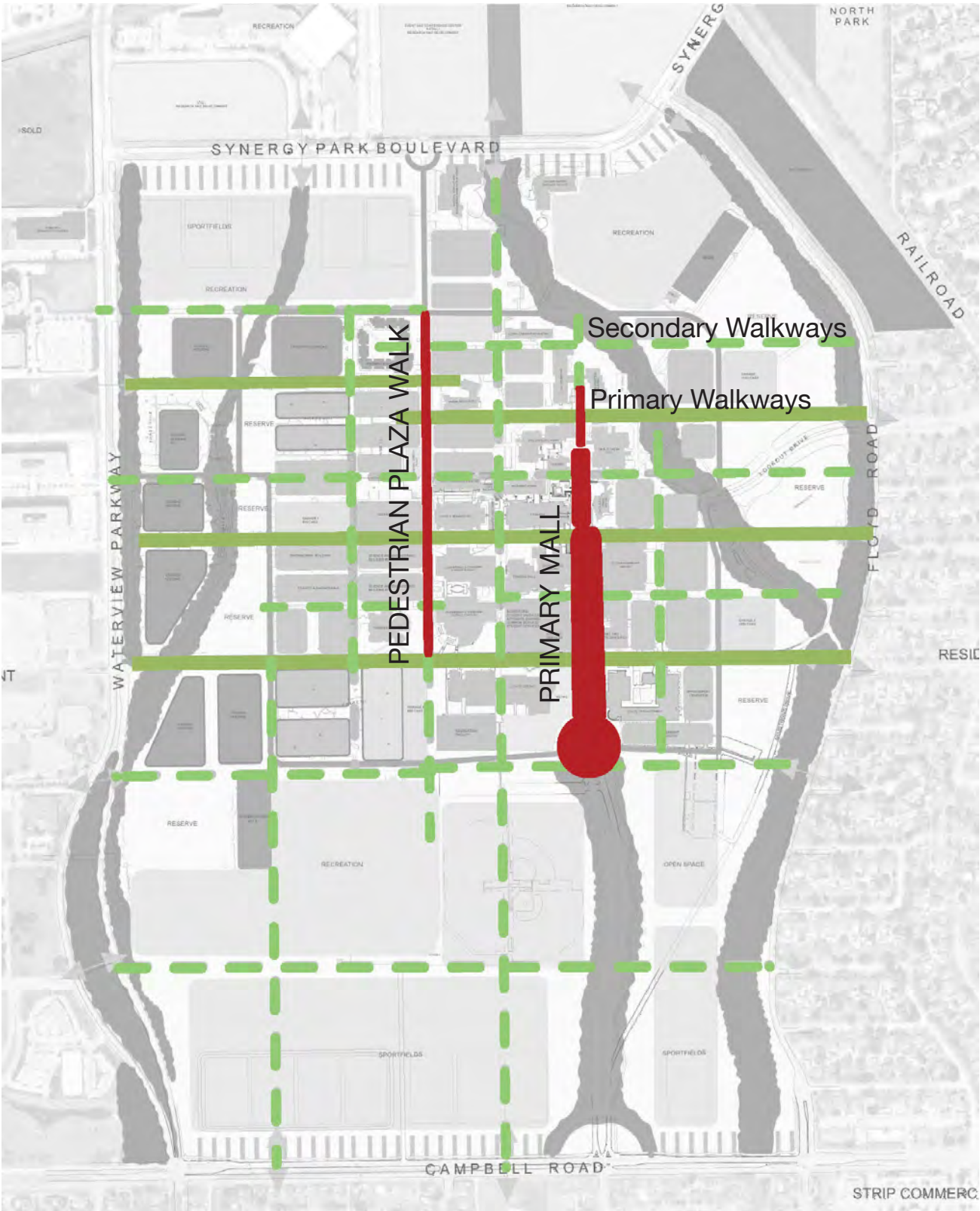
UCSD Library Walk - an example for a pedestrian plaza walk

The Mall

The two pedestrian zones will be main north/south organizing elements of the campus core. Acting as formal architectural spaces, the pedestrian zones will define the heart of the campus core and will be designed for pedestrian and outdoor social comfort.

The primary mall will begin at the end of the main entry corridor and terminate at Founders Building. It will provide spaces for pedestrian circulation as well as social interaction. Organized by a series of linear pools and columnar magnolias, the mall provides identity as well as structure for new campus development. It is designed to encourage informal conversations that extend the classroom experience and to provide a center of gravity for student activities and interaction. Special features not found elsewhere on campus will help distinguish this area as an important place on campus. An outdoor room created by a large arbor at the north end of the mall is designed to allow for year round exterior comfort by providing deep shade and the cooling effects of fountain mist. The existing steps north of the student union building will be re-clad in wood and will provide exterior outlets for laptops. Two large walls will serve as bulletin boards for community notices and events.

The second area is the pedestrian plaza walk extending south from the northern campus loop road at Rutford Avenue. Narrow in width and more intensive in service requirements for the adjacent laboratory buildings, this plaza is nonetheless intended to be a pedestrian mixing bowl.



Pedestrian circulation system and malls

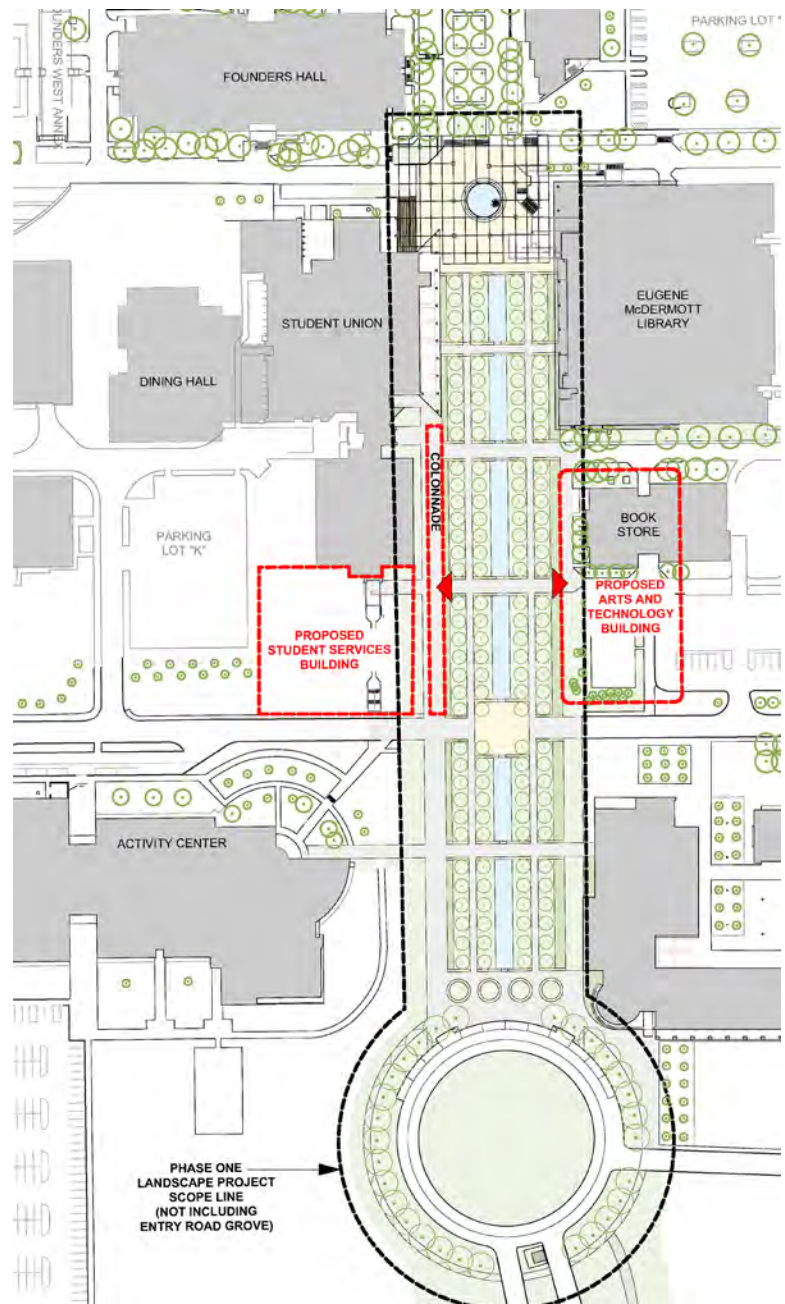


UTD primary mall with Phase 1 landscape improvements



UTD primary mall with future buildings

Vacant building sites along the mall should be the priority for new building construction on campus. Buildings along the mall should be placed so that a consistent line of façade edges compose and reinforce the mall's edges. The existing colonnade at the Student Union building should be an encouraged architectural component for new buildings. The colonnade along multiple buildings will not only be a unifying element along the mall but will create a comfortable pedestrian zone with shelter in times of inclement weather or intense heat.



UTD primary mall with proposed future building locations - status 2008



Colonnade along the mall



Existing colonnade along Student Union



Colonnades should frame the mall at the west side

Buildings

Adherence to Campus Organizational Elements

With the development of the renewed and expanded landscape entry from Campbell Road, UTD has reaffirmed its original organizing pattern of a dominant north/south axis with related east/west orthogonal connectors. This traditional American ‘grid’ approach has served the UTD campus well to date by creating an easily intelligible and maintainable sense of order. Many well-respected and successful examples of American campus planning ranging from Yale to Stanford have followed this paradigm. To that end, each structure and associated landscape must respect this order and attempt to reinforce it in terms of site planning, architectural massing and landscape character. In addition, the UTD campus organization gives ready opportunity to take advantage of proper solar orientation and related sustainability principles in designing each new project. This should lead to a campus which will become a hallmark of sustainable development for both its community and its students and faculty.

Architectural Character

While the current UTD campus is most notable for its rigor in complying with a general order of building arrangements, a color and material palette, and a general approach to building and landscape definition, it is important that a few specified future structures, due either to their site prominence or their campus program significance, assert a role in defining the overall architectural character of the UTD campus. The Site Development Plan identifies prominent sites that will by their location have this opportunity and responsibility. While these projects must be very respectful of their context and impact, they will also define the identity of the University of Texas at Dallas in a significant manner. Most other projects on less critical sites or programmatic use, must continue to support the “whole of the identity” of UTD by following the tradition of recognizing the careful massing, scale and color/material palette of the current development in 2008.

Connective Elements

Important to the functioning and general character of the UTD campus is the ability to move among the various facilities with ease, shelter from the elements, and the opportunity for the ‘chance encounter’. While some existing building canopies and entries support this desired activity, many do not. These latter structures exhibit an attitude of ‘self-sufficiency’ that is not supportive of a contemporary research university, and will be detrimental to future growth and development of the institution. Therefore, new facilities must respect and promote the need for connectivity among students, faculty and staff in order to promote collaboration, social exchange, and UTD fraternity that is essential to the development of a contemporary 21st century

research university. These elements defined architecturally include common arcades, sheltered and defined entries with space to allow for relaxation and social interchange, available well-landscaped courtyards with public art, convenient public facilities, e.g., drinking fountains, benches, etc. and transit-related amenities. Each new facility at UTD must recognize this inherent requirement and provide them accordingly.

UTD DALLAS ARCHITECTURAL GUIDELINES

A campus is built over time. It is extremely rare that a singular building project, particularly for a modestly funded state university building, will transform a campus in any positive and memorable way. However the careful placement and design of buildings can transform a campus over time in ways that far exceed the potential of a single building.

Above all it is important that architects do three things ranked by decreasing levels of importance. First, put the building in the right place in consideration of context. Second, utilize the building to shape open space. Third, make architecture. In most cases, the raw structure for the first two goals should be established by a well planned campus master plan. Additional conversation with the campus architect or planners as well as the landscape architect may assist with responding to sensitive grade transitions. The third goal is best achieved not with lavish material or square footage, but rather with attention to proportion, simplicity of materials, and a close study of what is working already on the campus.

Prior to the establishment of the campus master plan, the UT Dallas environment was built without much attention to the first two goals and only with the addition of the new Mall has begun to provide a structure around which architectural additions are adding to the campus whole.

Form

Contributing to the larger network of open space and shaping outdoor rooms and circulation requires simplicity and repetition in building shapes. Simple building forms such as those that are made from rectangular bars forming any of the capital letters T, I, U, E, and L in combination or alone are good examples of the basic building shapes.

Simple attention to locating buildings with parallel and aligned walls to adjacent structures and understanding the campus open space as created in part by the location of the building walls will prevent most errors.

Of course there will be rare occasions for exceptions. It would be likely that buildings with singular programs such as theatres,

art museums, and administration buildings may break from this pattern to provide incidence within the system. However, it is not required.

Maintain compatibility and unity with existing refined 'brutalistic' precast buildings of the original campus core. Concentrate future construction in the core campus open spaces with buildings of a minimum of three stories.

Establish a pedestrian only zone within the core campus, which allows for bicycle traffic, delivery and safety vehicle and limited handicapped parking.

Mass

The height of most buildings on the UT Dallas campus is between 3 and 4 stories. This height is more than adequate to meet the GSF required for academic planning for years and it is suggested that buildings continue at this height until a change is required by lack of space within the campus core.

Careful study of the building height relative to its adjacent open space should be made to insure there is good proportion and natural light both within the structure and in the surrounding open space. Where existing site conditions prevent a comfortable proportion, alternative means such as dense tree planting may be used to mask buildings and provide scale, but this is always a lesser option.

Roofs and Facades

Existing buildings are characterized by simple box structures with little expression of either the façade or the roof. It is appropriate for this simple building form to be continued, but there should be much more development of the planar qualities of the façade, including the use of layering to add interest as well as opportunities for shade strategies appropriate to the climate.

Roof materials shall be economic and sustainable. Green roofs, modified bitumen, or standing seam copper roofs are acceptable.

Clerestories and skylights should be included which allow light into building interior

Colonnades or exterior covers/canopies should be incorporated along pedestrian malls.

EIFS shall not be utilized; stucco is acceptable.

Windows and Curtain Walls

The use of glass as a new material that will lighten and contrast to the existing heavy pre-cast / cast in place concrete buildings currently on campus is encouraged. Appropriate design of the daylighting strategies to afford energy efficiency is required.

Fenestration should be determined by functional requirements. Windows may be punched through façades, banded in ribbons or form the majority of external walls.

Detail

Reveal joints and texture in exterior walls should be included to create form, shadowline and shade pattern and provide accents to solid walls.

Exterior surfaces of all permanent buildings are to be a light neutral – off white or tan in color with materials chosen which will weather to a handsome patina.

Use of bronze in exterior accretions such as attached light fixtures.

Exterior railings and hand rails should be stainless or galvanized.

Consideration should be given to the appropriate location and size of service entrance and docks.

Dark forest green, white, orange and terra cotta red are preferred accent colors.

Entrances and Open Spaces

Building entries should be expressed to make entries obvious. The addition of lighting, seating, stairs, and other elements that may make the entry a place to pause are encouraged.

Certain areas within the campus core are to be designated to remain as open landscaped green areas linked by pedestrian pathways.

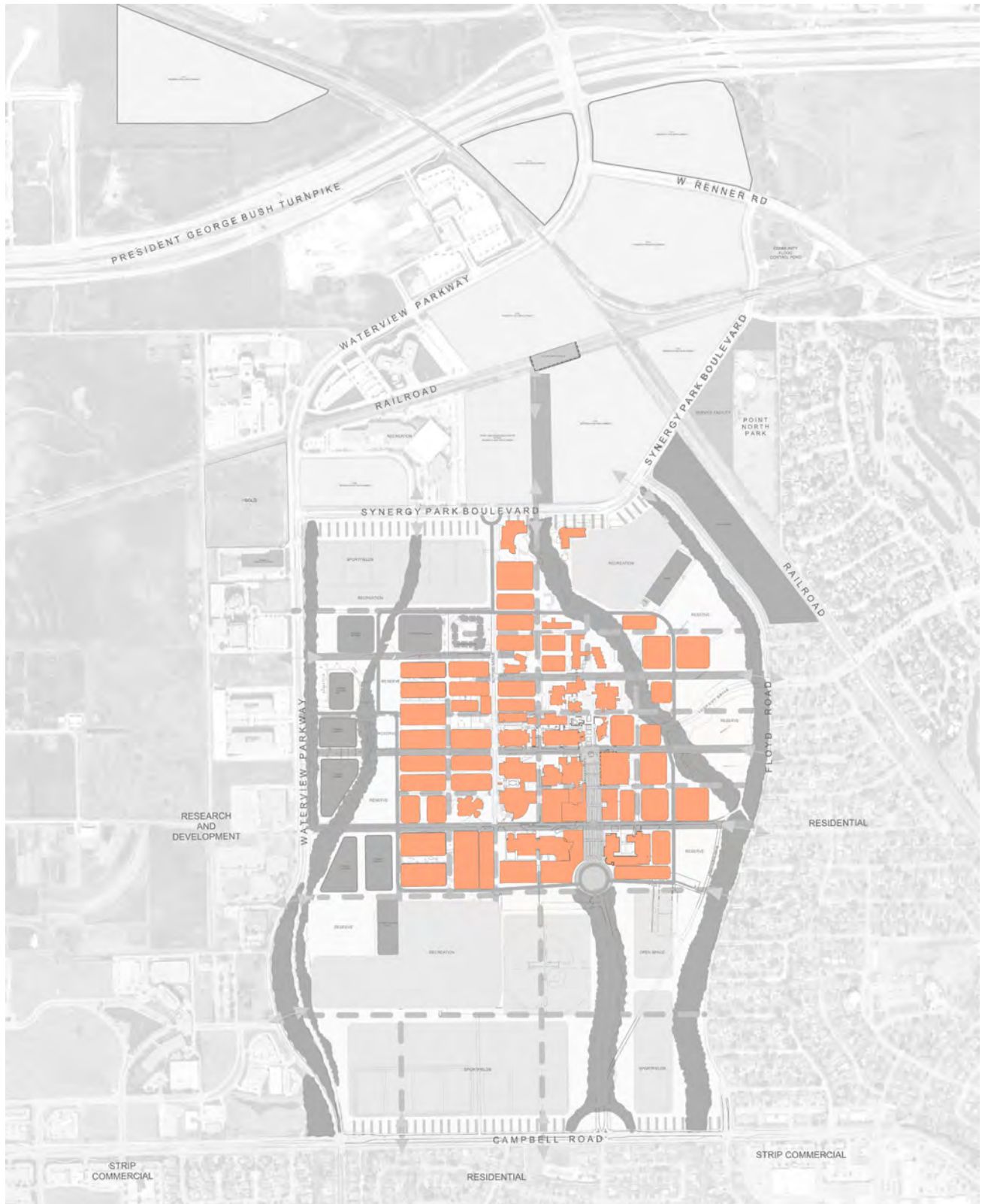
Design elements which create recess and penetrations should be included.

Building entrances should be naturally obvious.

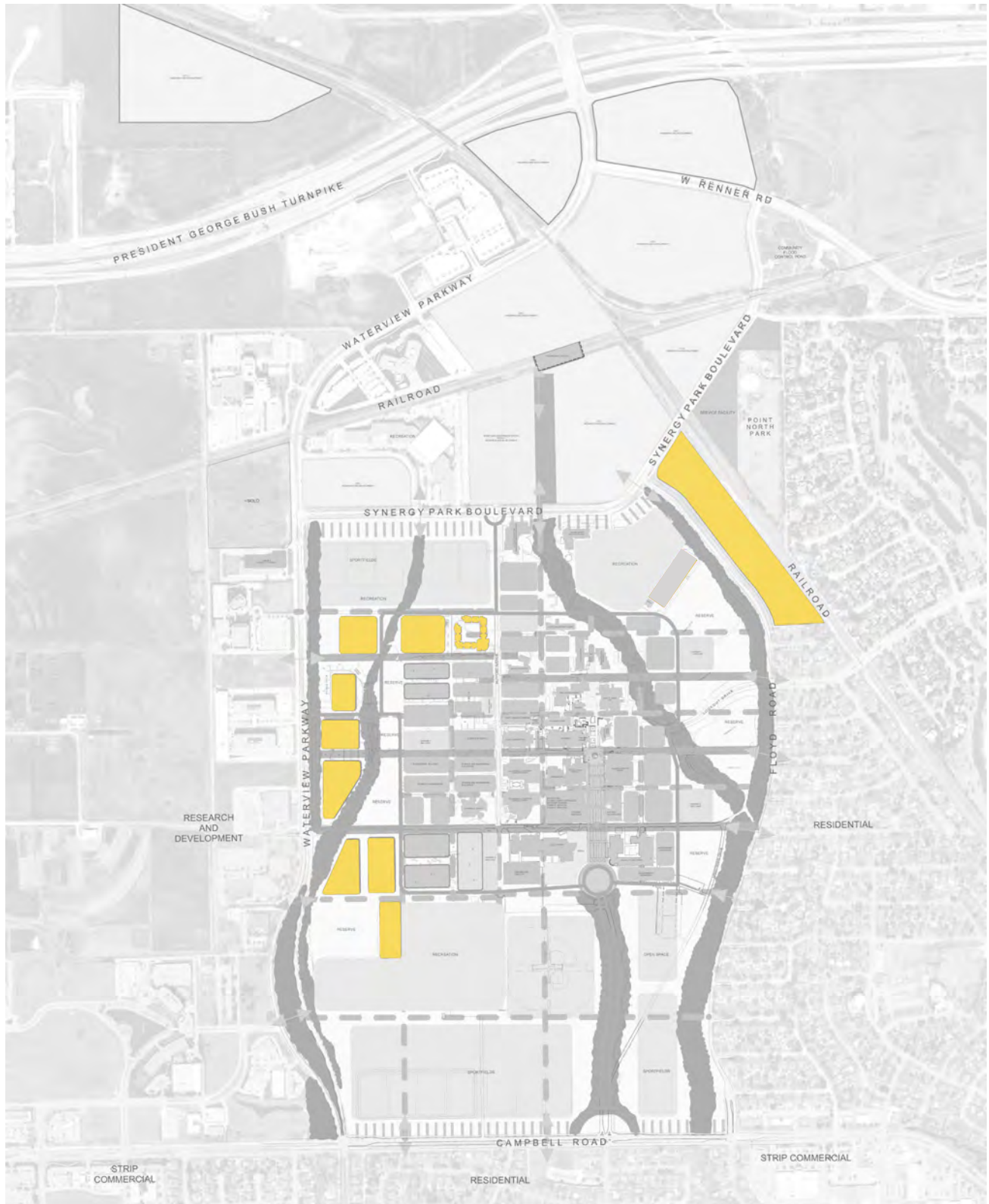
Earth-tone paving materials will be used on pathways throughout the campus that can withstand heavy use and remain functional.

External metal furniture will be powder coated and dark green in color.

Grade changes at main entries must integrate accessibility ramps into the design

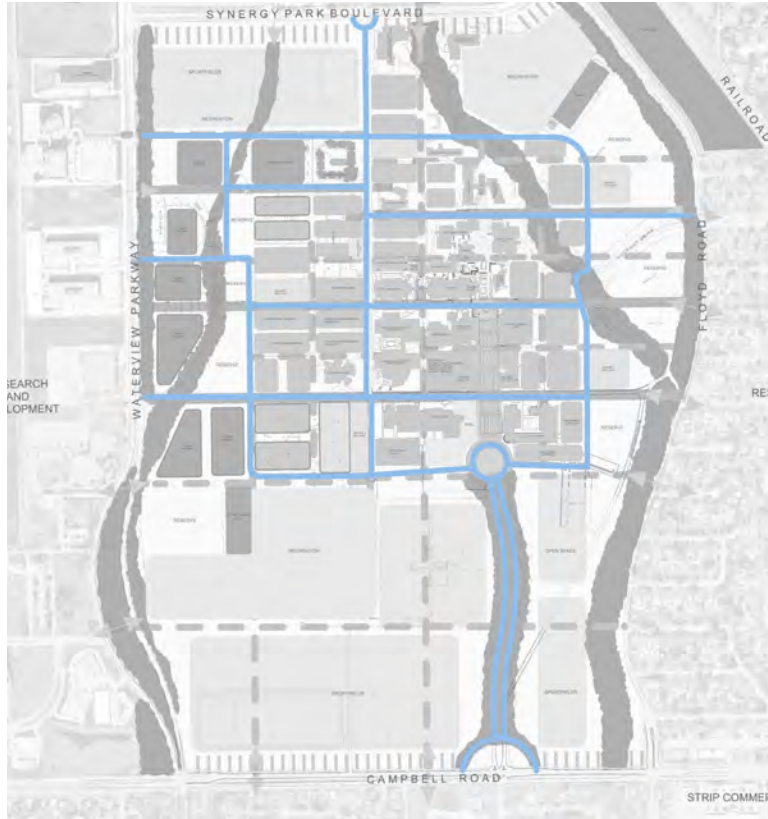


Full build-out of academic buildings: Buildings conform to the grid organization



Future student and faculty housing





Major service and fire lanes

Facilities

Similar to small towns, college campus's must provide a system of facilities, such as building and grounds maintenance, mail delivery and power supply, among other support services. These facilities require dedicated physical space to house equipment and personnel.

The Landscape Site Development Plan proposes that the physical space dedicated to these facilities be primarily located outside the campus core. The University recently relocated its service center to the north-east corner of the campus; this is a suitable location that is appropriate within the newly proposed campus landscape framework. Facility space, such as storage or small office space, can be located within the campus core but should be considered as satellite spaces with primary materials handling storage, and ancillary office spaces located outside the campus core.

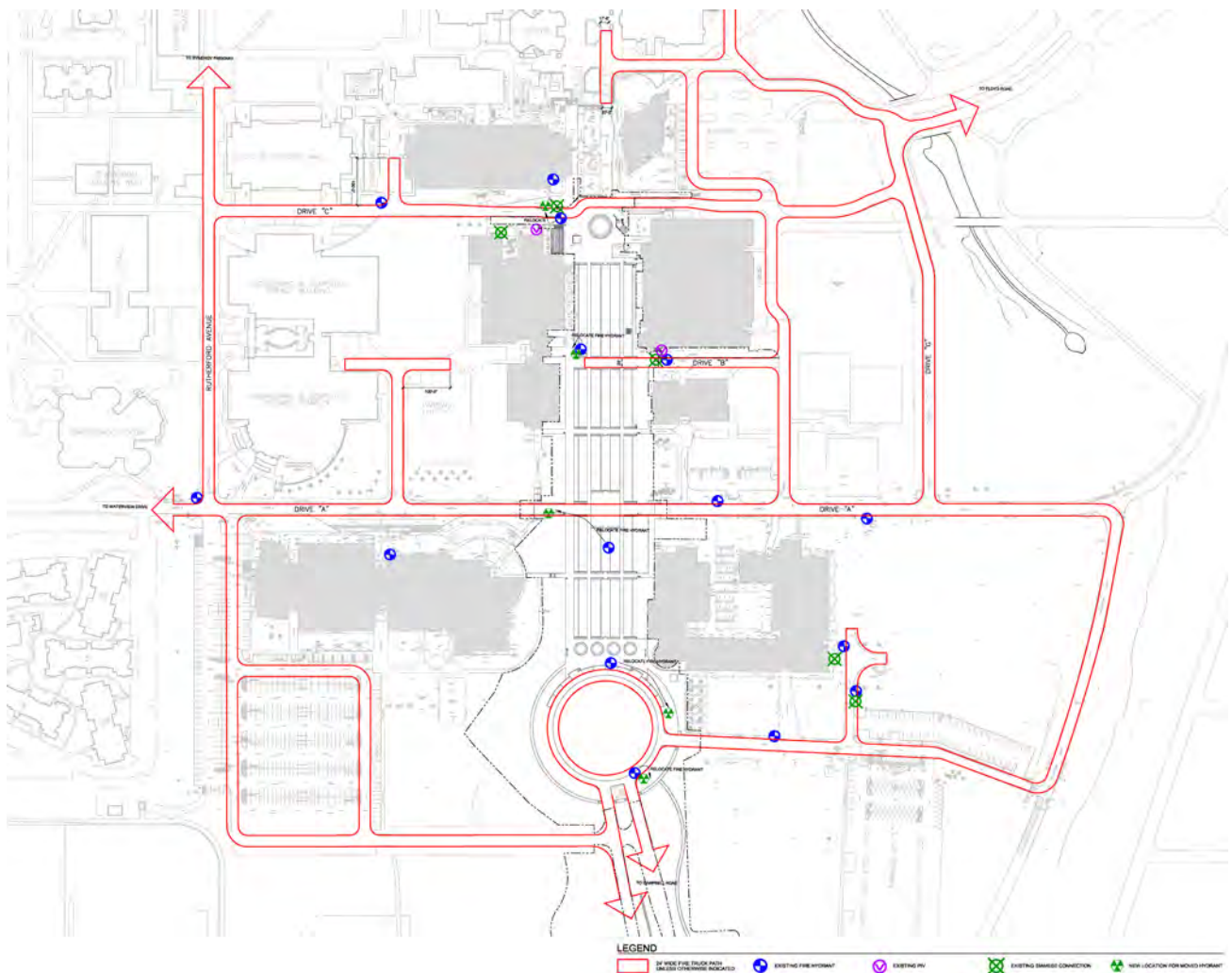
Service

The day-to-day operations of a college campus require a large number of service and delivery trips to the campus. As the campus shifts to a more pedestrian-dominated campus, the control of service vehicles will be imperative to the preservation of pedestrian comfort and accommodation on the university campus.

It is recommended that service access to buildings be moved away from significant open spaces such as the proposed Mall. Within the pedestrian campus core, service vehicle access will be accommodated in the same pathways used by pedestrians.

Emergency Vehicles

Emergency vehicles will access the campus core on the pedestrian walkways which will be designed to accommodate them. Emergency vehicle access requires 24'-0" horizontal clearance and 14'-0" vertical clearance. In limited areas the horizontal clearance may be reduced to 20'-0" to accommodate existing conditions or programmatic needs. Maximum distance for access to a building is 250'-0". Maximum distance for dead ends is 150'-0" unless an exception is approved by the City of Richardson fire marshal and the campus safety office.



Fire lanes provide access to each building - confirmed status 2007



Soccer fields shared with the community

Recreational and Sports Fields

The north and south sides of campus are currently used for recreational and sports fields by both the university and community population. The Landscape Site Development Plan proposes preserving these fields. The fields provide a green field of vision that distinguishes the campus from the surrounding commercial and residential land uses. In addition, the openness of the fields acts as a counterpoint to the planned densification of the campus core.



Existing sport fields south of School of Management



New recreational programs at UTD - track team



Recreational zones and sportsfields are in the north and the south of the campus core



Hedge rows



Wildflowers in between the hedge rows



Mock up planting along University Parkway



Existing native plants along the creek

Campus Edge/Creeks

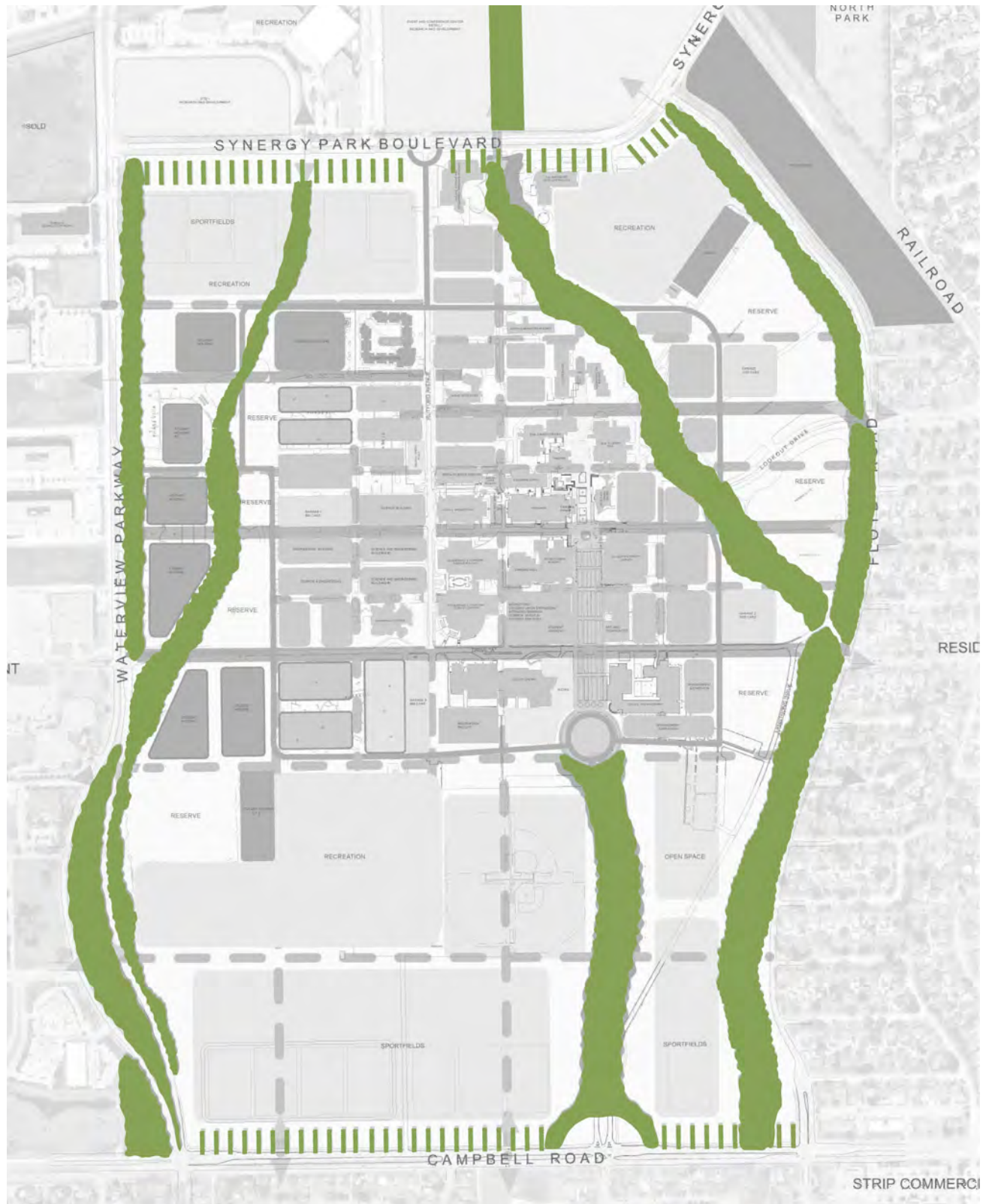
The Campus Landscape Site Development Plan proposes significant improvements to the campus's edge and the riparian corridors that course through the campus. These landscape elements are natural resources to the campus which have great potential to improve the visual quality and experience of the campus.

The campus edges should visually distinguish the boundary of the campus in a way that sets it apart from the surrounding developments. At the north and south campus edges, tall hedges planted perpendicularly to the street will indicate the campus border. This park-like frontage will be a visual indication of the campus but will create an open and penetrable threshold between the campus and the surrounding community. Planted in between the hedges will be native wildflowers that will be coordinated with the City of Richardson wildflower planting program. The wildflowers and sports fields beyond will be a symbolic gesture to the local prairie ecological character.

The campus's east and west edges will be predominantly defined by the waterways that course through the campus. Native riparian planting will be reintroduced to the corridor which will serve as a lush separation between the campus and the surrounding suburban neighborhood and commercial development.



Model shot with hedges and forest planting along the creek



Campus edge - Hedge rows in the north and south and native forest type planting along the east and west



Sportfields are used by the neighborhood

The Neighborhood Connections

Nestled among surrounding residential neighborhoods, the UTD campus will maintain and strengthen its connection to the surrounding neighborhood in a number of ways. The proposed pedestrian movement system is designed to extend to the campus periphery and act as a passage between the campus and the community. This connection will be an inviting link to the community who use the sports fields for recreational purposes. In addition, once the riparian corridors have been improved, the community may enjoy visiting these naturalistic, park-like areas of campus.

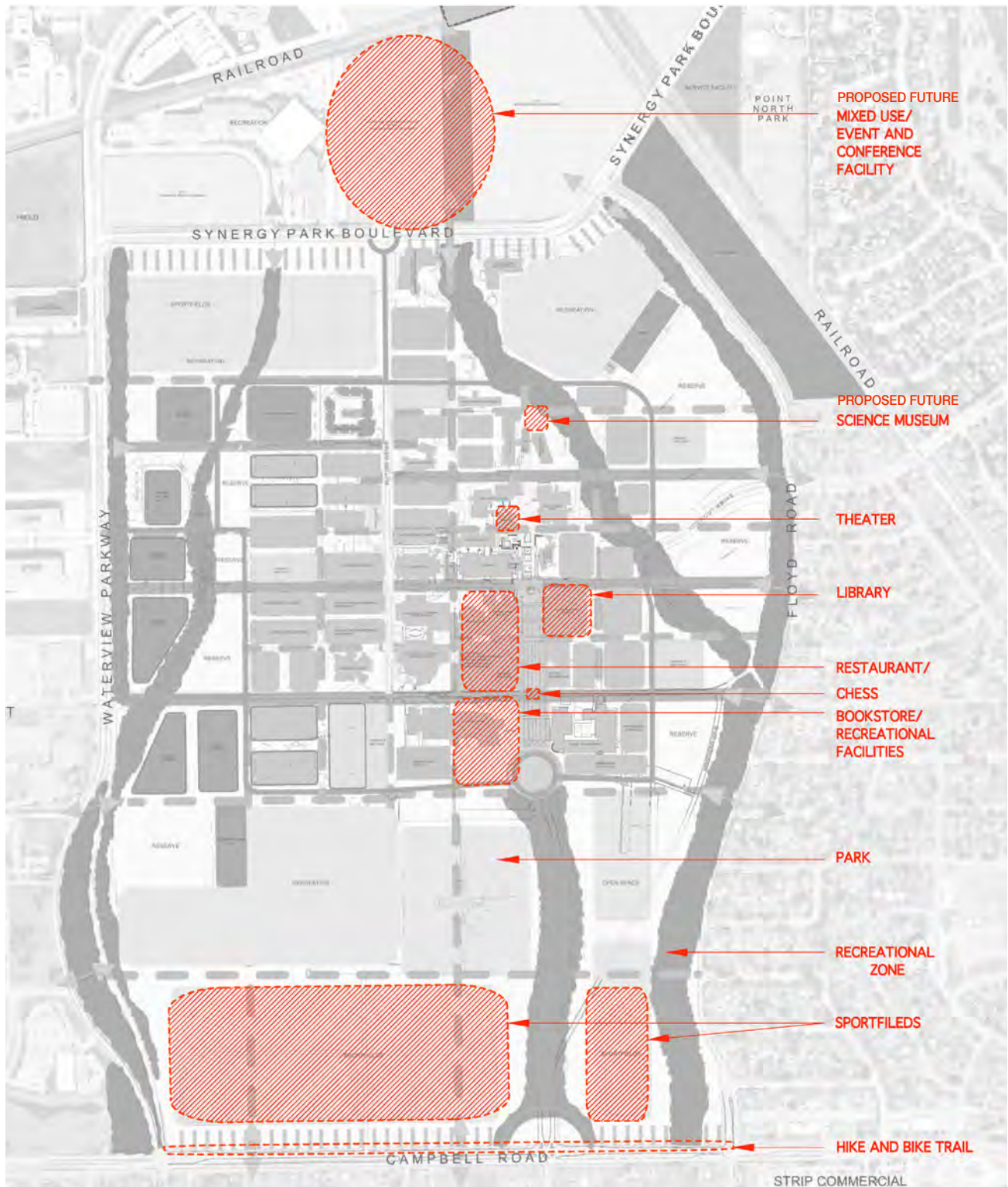
The campus will also be open to the community for various services, such as the theater and library. In the future, additional amenities such as a possible future museum or restaurant facilities, can be enjoyed by the community as well. Future expansion of the campus will include facilities that can be used by the community, particularly when the DART extension comes to the north campus boundary. This northern edge of campus will become a mixed-use area with facilities such as a conference center and commercial and restaurant attractions.



Proximity



Existing retail with Campus frontage along Campbell road intersected by the University Campus - conceptual graphic



Neighborhood opportunities at the campus: existing and proposed

Chapter 5

IMPLEMENTATION

The implementation of the Campus Landscape Site Development Plan is tied to dates in the strategic plan to 2015. The full realization of the Plan is projected out to key milestone dates through to 2050. Collectively the construction of these new elements will serve as the corner stone for the UT Dallas campus development. Ultimately, UT Dallas should be a world class institution with a built environment that is both functional and inspiring. Anticipation of concurrent and near future development of buildings to house student services and academic needs is planned and incorporated into the design.

Implementation Approach

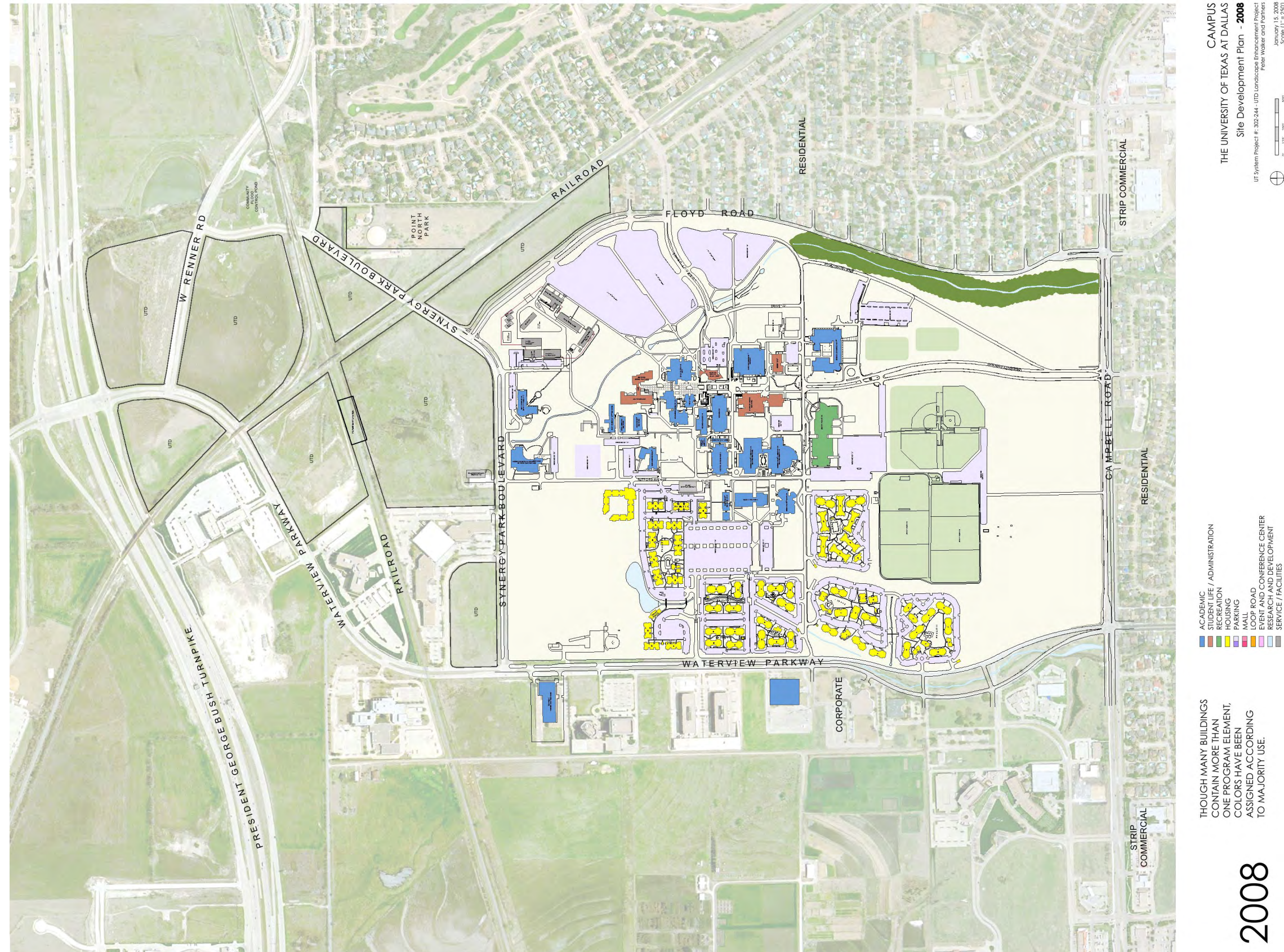
Implementation of the Site Development Plan will occur over many years. The University's ambitious building program in relation to the strategic plan will jump start this process with the development of a significant number of building projects totaling \$770 million in construction. In addition, the campus landscape enhancement project will redefine the open space of the campus and provide strong examples of many campus standards that can be used elsewhere.

Table A-6 Summary of Building and Renovation Plan

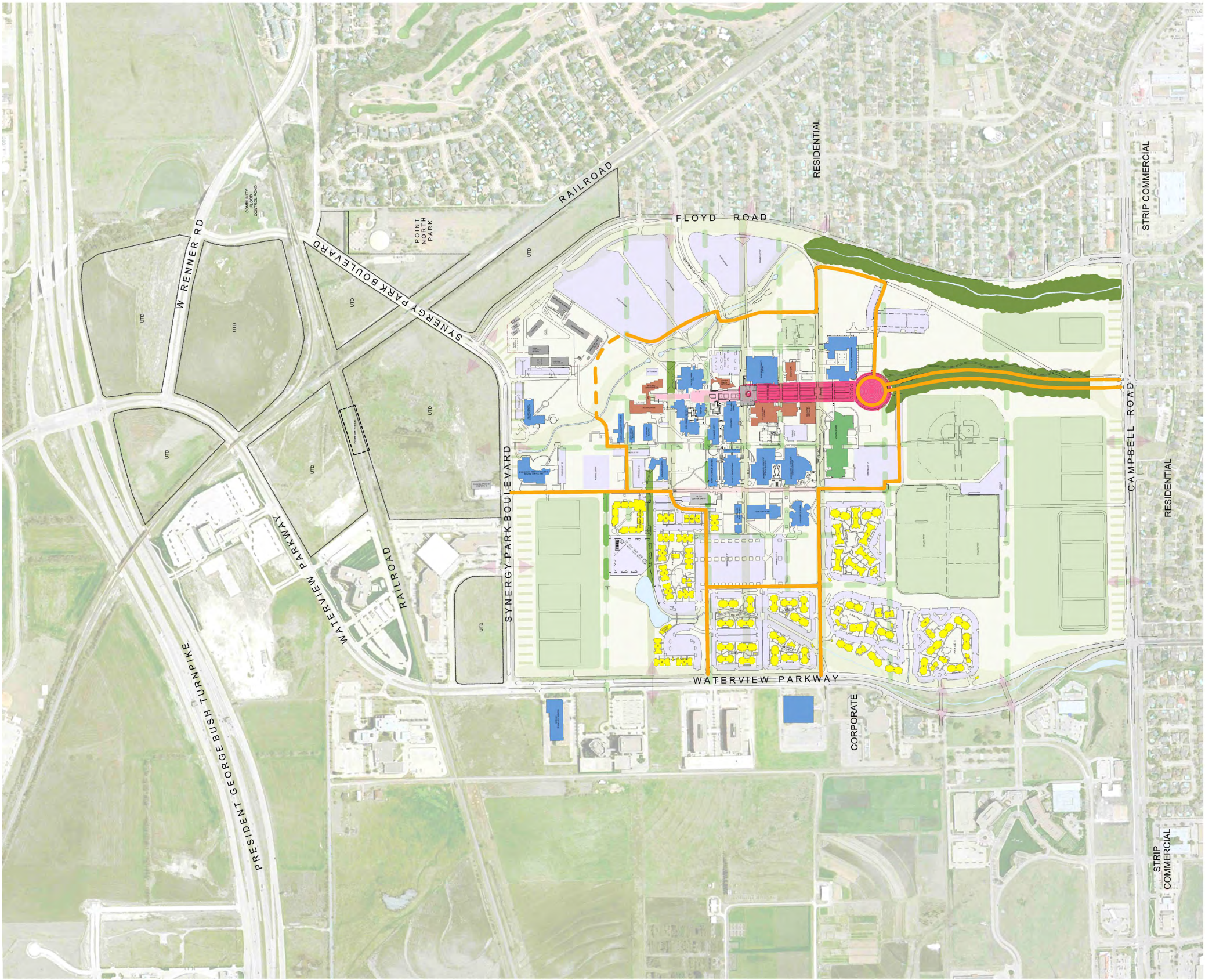
Source	Building or Project	Cost (\$ M)	When Needed	When Authorized
State or UT System PUF or Private	Vehicular & Ped. Safety Improvements	10	2007	2007
	Arts and Technology	40	2010	2007
	Infrastructure (Electrical Upgrade)	3	2011	2007
	Renovation (Vacated Space)	20	2010	2008
	Engineering Building	140	2016	2011
	Infrastructure (Energy Plant)	15	2011	2008
	Science Building	90	2017	2013
	Management Expansion	26	2014	2010
	Renovation (Library)	9	2014	2011
	NSERL 2	80	2015	2011
	NSERL 3	80	2018	2014
	Renovation (Green Hall)	18	2014	2011
	Visual Arts Studio Relocation	10	2014	2011
	TOTAL: State, UT System, & Private	\$541		
UT Dallas	Housing #1 (Rent Income)		Complete	
	Food Service (Service Income)		Complete	
	Parking Lots (Parking Fee Income)	3	2010	2009
	Student Services Building	28	2010	2007
	Parking Garage (Parking Fee)	10	2013	2011
	Housing #2 (Rent Income)	30	2011	2009
	Bookstore (Rent Income)	9	2011	2010
	Recreation Facility (Fee)	36	2014	2011
	Student Union Expansion (Fee)	15	2014	2011
	Renovation (Callier)	12	2014	2011
	Events & Conf. Center (UTD + Income)	49	2015	2012
	Housing #3 (Rent Income)	30	2015	2012
	Renovation (Conf. Center Conversion)	7	2015	2012
	TOTAL: UT Dallas:	\$229		
Private	Goad Building 2nd Floor Finish		Complete	
	TOTAL: Private	\$0		
	GRAND TOTAL:	\$770		

UTD Building and Renovation Plan - revised April 2010

Site Development Plan 2008



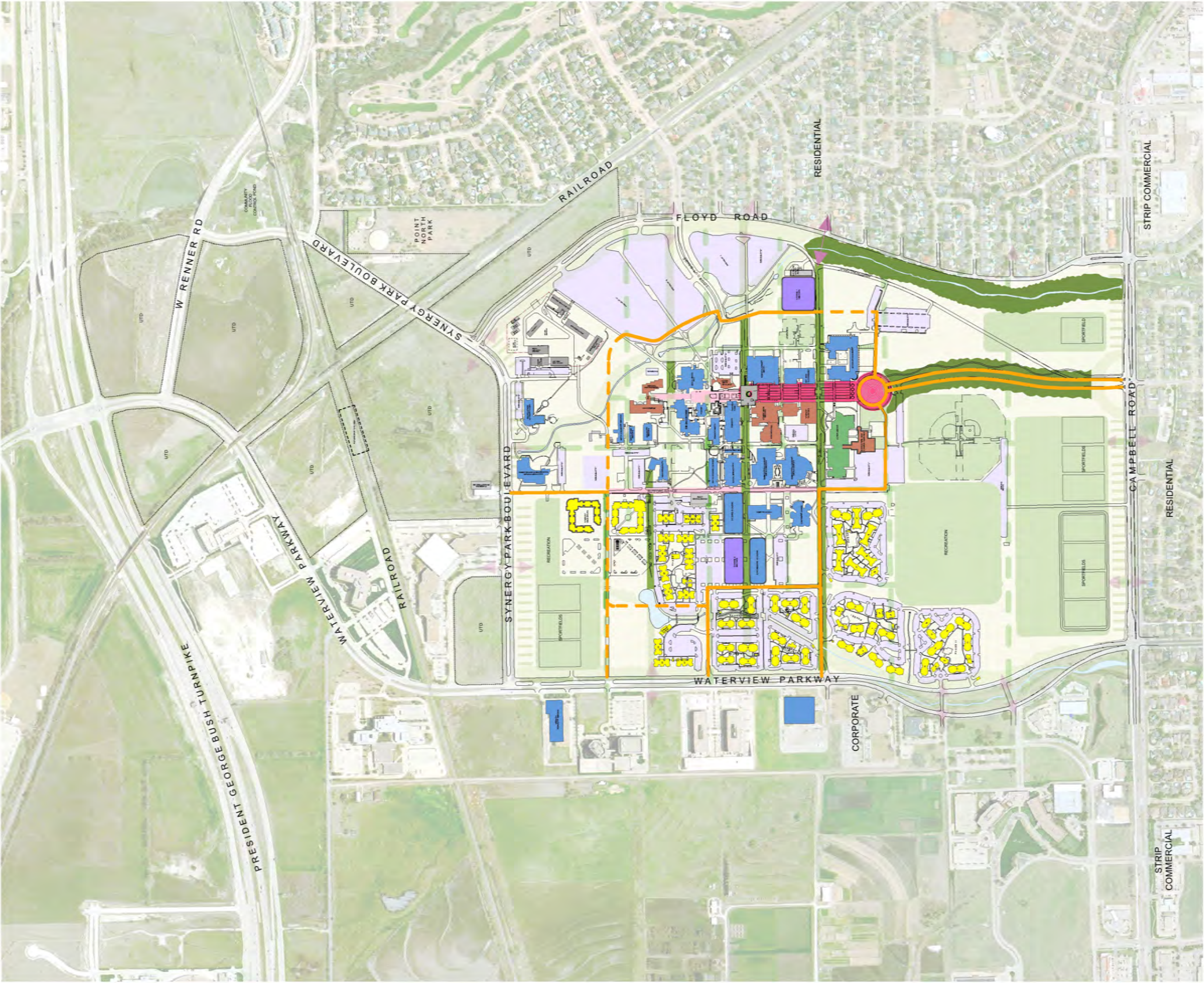
Site Development Plan 2010





Aerial UTD Campus - 2010

Site Development Plan 2012

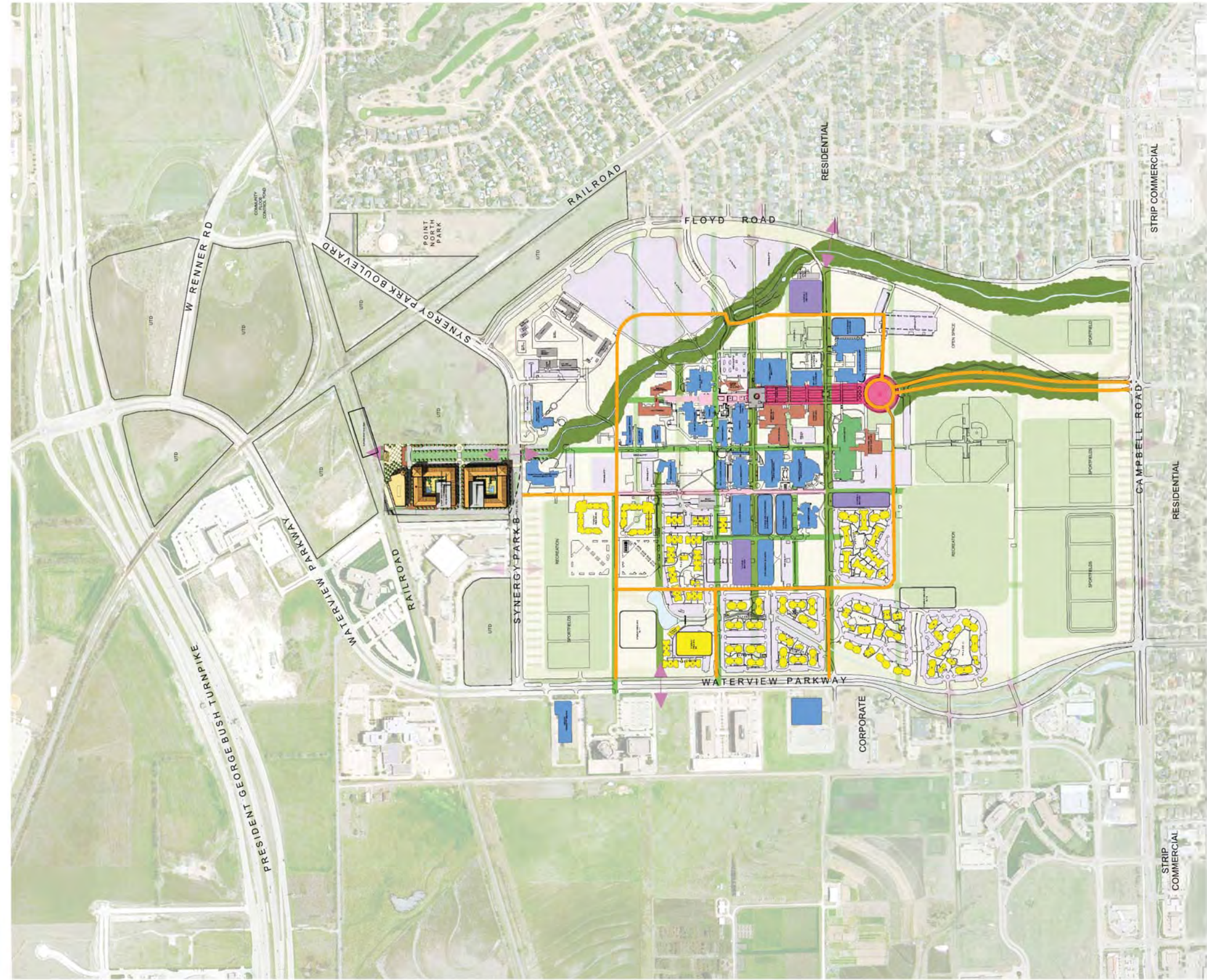


CAMPUS
THE UNIVERSITY OF TEXAS AT DALLAS
Site Development Plan - 2012
UT System Project #: 302-244 - UTD Landscape Enhancement Project
New Walkway and Parking
January 15, 2008
Scale (1" = 200')

- ACADEMIC
- STUDENT LIFE / ADMINISTRATION
- RECREATION
- HOUSING
- PARKING
- WALKWAY
- EVENT AND CONFERENCE CENTER
- RETAIL
- RESEARCH AND DEVELOPMENT
- SERVICE / FACILITIES

THOUGH MANY BUILDINGS
CONTAIN MORE THAN
ONE PROGRAM ELEMENT,
COLORS HAVE BEEN
ASSIGNED ACCORDING
TO MAJORITY USE.

2012



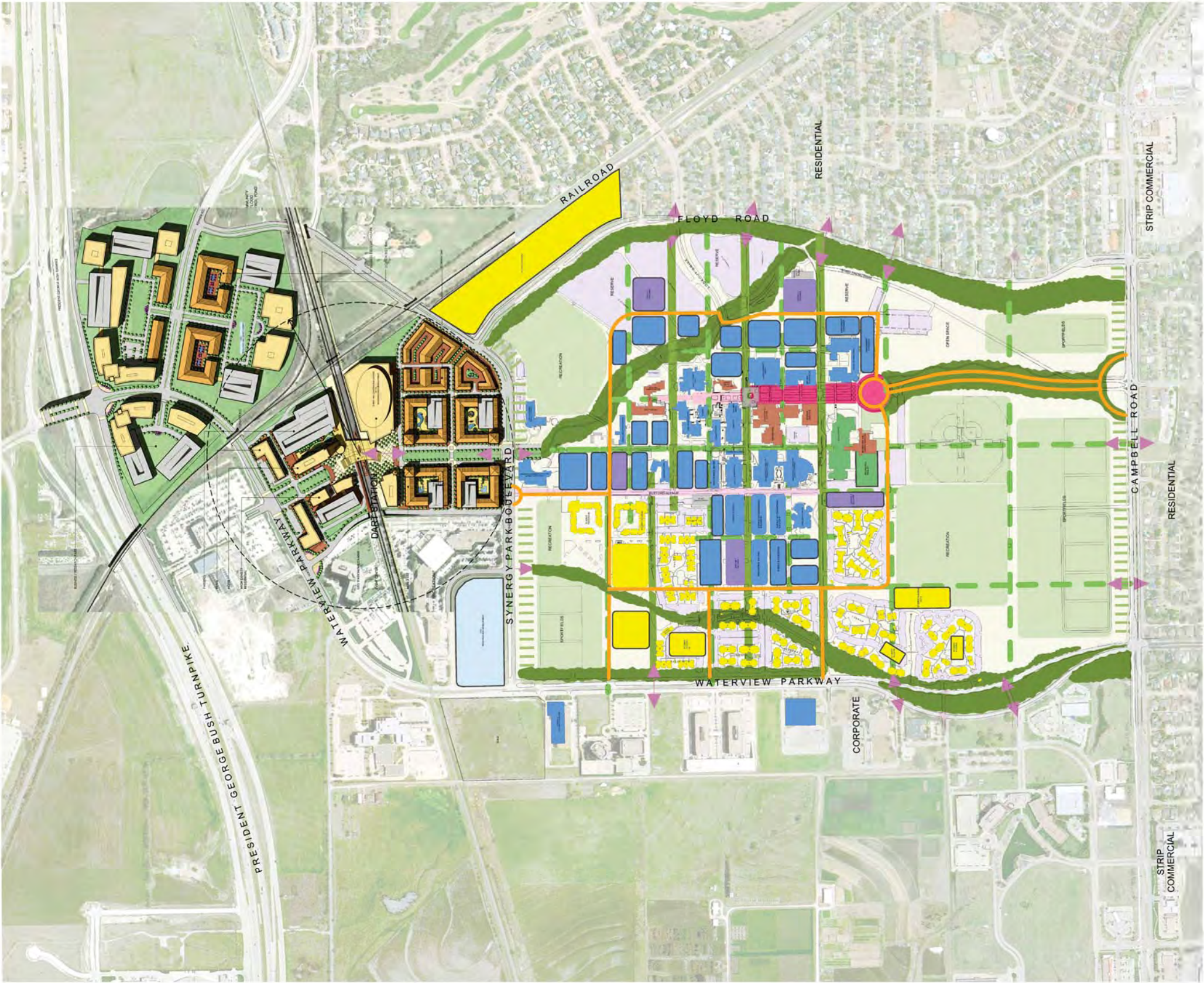
THOUGH MANY BUILDINGS
CONTAIN MORE THAN
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2015

ACADEMIC
STUDENT LIFE / ADMINISTRATION
RECREATION
HOUSING
PARKING
MALL
LOOP ROAD
EVENT AND CONFERENCE CENTER
RETAIL
RESEARCH AND DEVELOPMENT
SERVICE / FACILITIES

CAMPUS
THE UNIVERSITY OF TEXAS AT DALLAS
Site Development Plan - 2015
System Project # 302-244 - UTD Landscape Enhancement Project
Peter Walker and Partners
January 15, 2008 / revised April 01, 2010
Scale 1"= 250'

Site Development Plan 2030

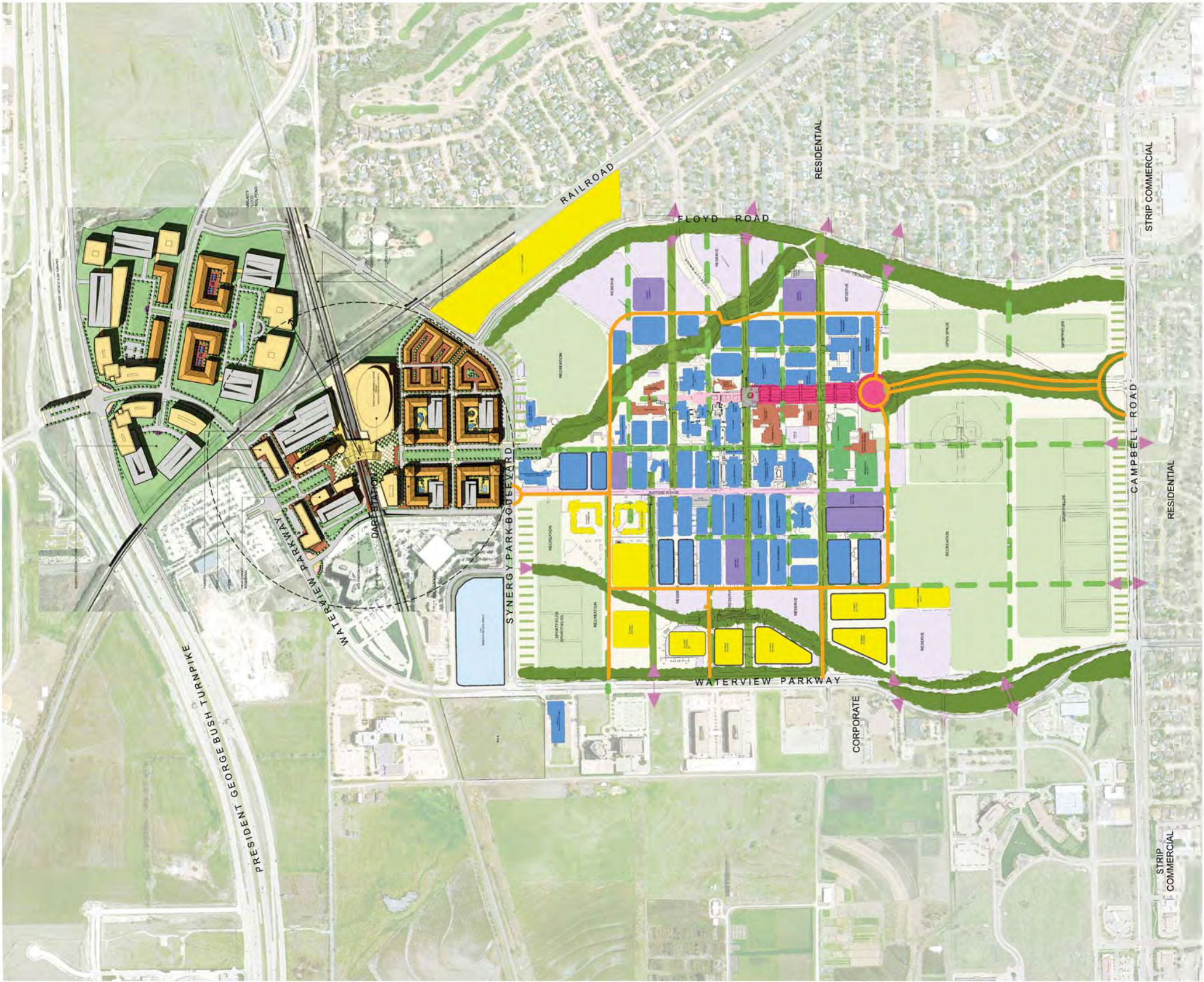


THOUGH MANY BUILDINGS
CONTAIN MORE THAN
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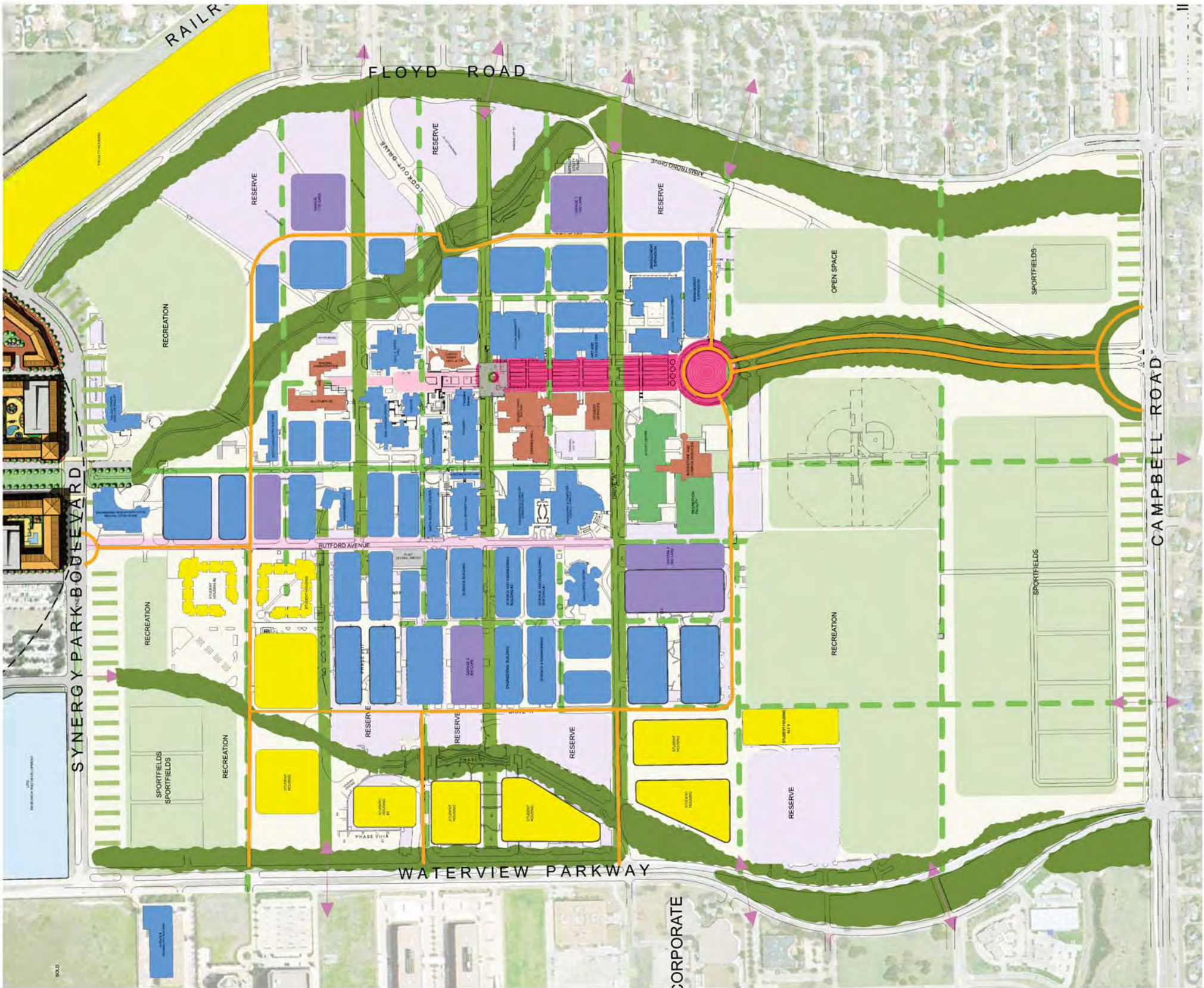
CAMPUS
THE UNIVERSITY OF TEXAS AT DALLAS
Site Development Plan - 2030
UT System Project # 302-244, UTD Landscape Enhancement Project
Peter Walker and Partners
January 15, 2008 / revised April 01, 2010
Scale 1" = 250'

2030

Site Development Plan 2050



Site Development Plan 2050



CAMPUS
THE UNIVERSITY OF TEXAS AT DALLAS
Progress Masterplan - 2050
UT System Project #: 202-244 - UTD Landscape Enhancement Project
Peter Hester and Partners
January 15, 2008 / revised April 01, 2010
Scale 1" = 150'

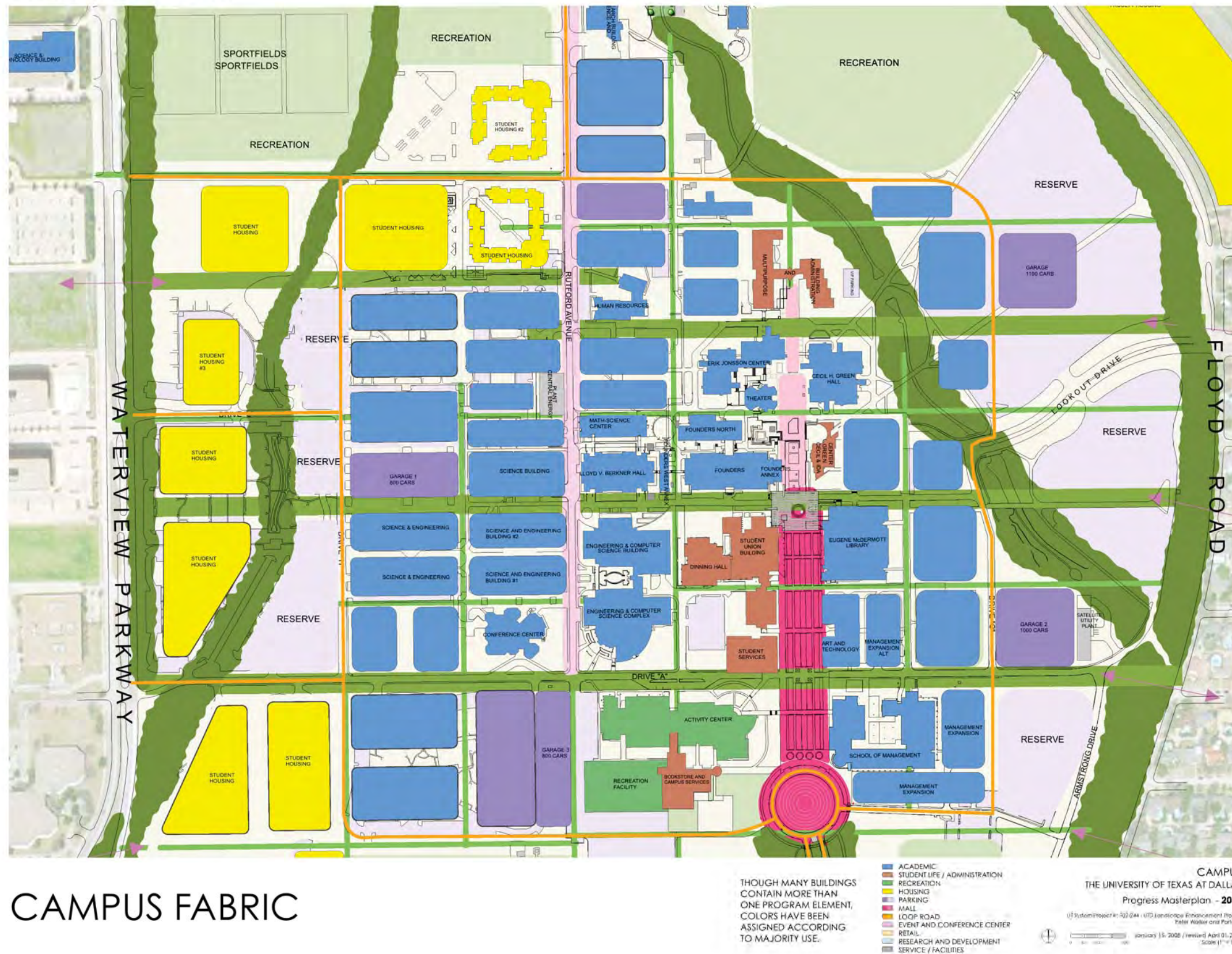
- ACADEMIC / ADMINISTRATION
- RECREATION
- HOUSING
- PARKING
- MALL
- LOOP ROAD
- EVENT AND CONFERENCE CENTER
- RESEARCH AND DEVELOPMENT
- SERVICE / FACILITIES

THOUGH MANY BUILDINGS
CONTAIN MORE THAN
ONE PROGRAM ELEMENT,
COLORS HAVE BEEN
ASSIGNED ACCORDING
TO MAJORITY USE.

2050

Campus-Enlargement

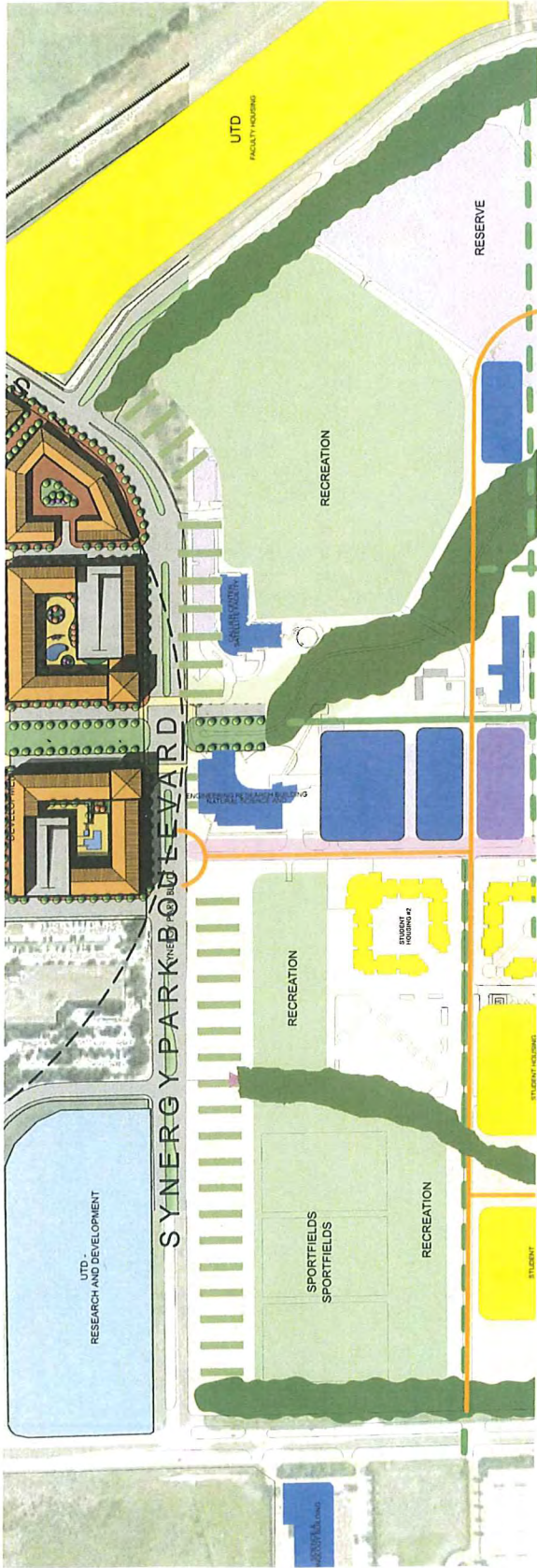
Site Development Plan 2050



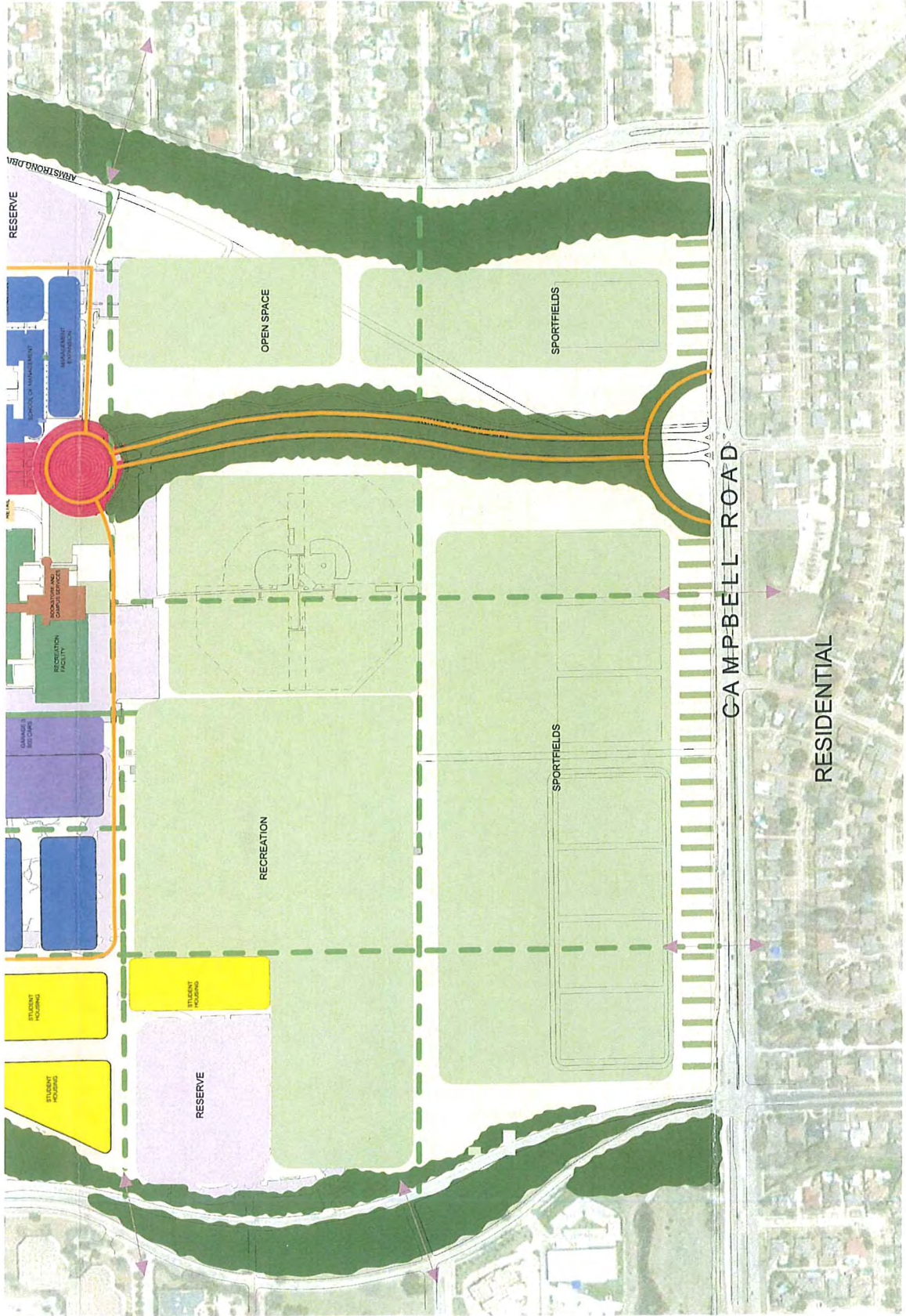
CAMPUS FABRIC

Campus-Core Enlargement

Site Development Plan 2050



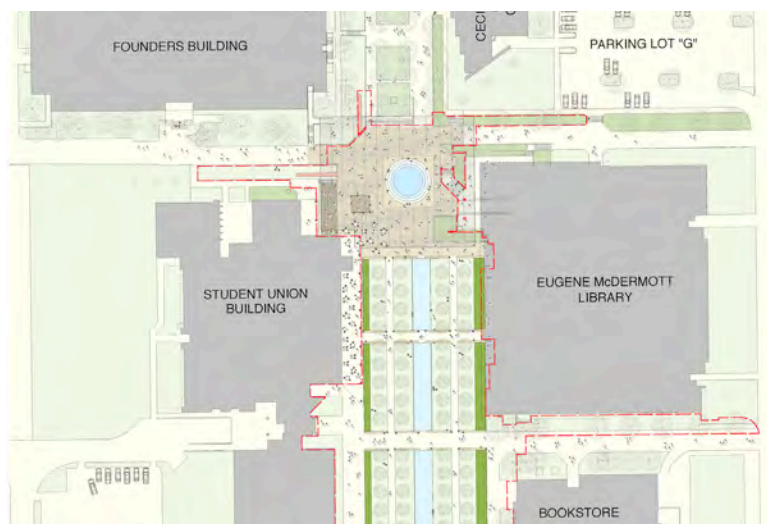
SPORT AND RECREATION - NORTH



SPORT AND RECREATION - SOUTH



*Scope
of Phase I Project*



Phase I Project

This document describes the schematic design of a new open space at the center of the University of Texas at Dallas. The Landscape Site Development Plan has identified this project as critical to both the activation of social space on the campus and the overall creation of identity for the University. The new open space includes five significant landscape elements: a shaded plaza, a large mall, an entry circle, a heavily planted entry grove along University Parkway, and the south edge of Campus along Campbell Road.

The mall will provide a fabric of open space that links the existing library and student union building and extends to the south in order to link the School of Management, and the Student Activity Center. It will include a large arbor as well as a series of linear pools and plantings. The entry circle will serve as a transition between vehicular and pedestrian circulation systems and will provide an important point of orientation for new visitors to the campus. The entry grove will provide structure for the vehicular entry into campus and will be constructed with plantings that are endemic or native to the Dallas area. The Campbell Road edge will provide a new image for the Campus and Entry treatment at University Parkway.



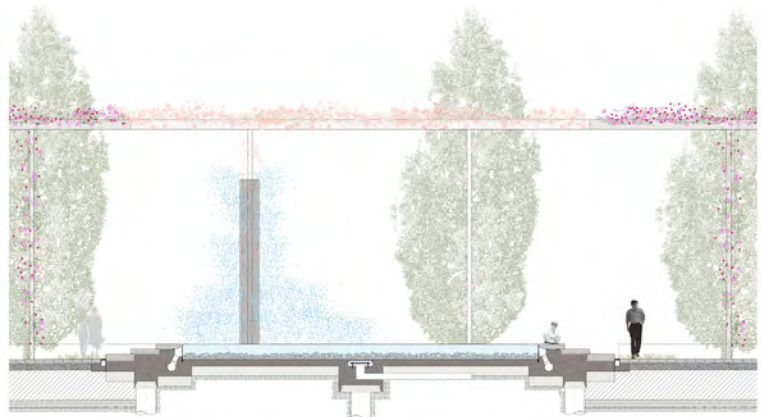
Phase 1 in campus context - 2008



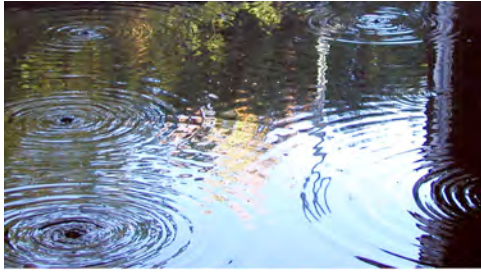
Arbor and water mist design character



Arbor model photos



Section drawing through arbor



Special landscape features design character photos



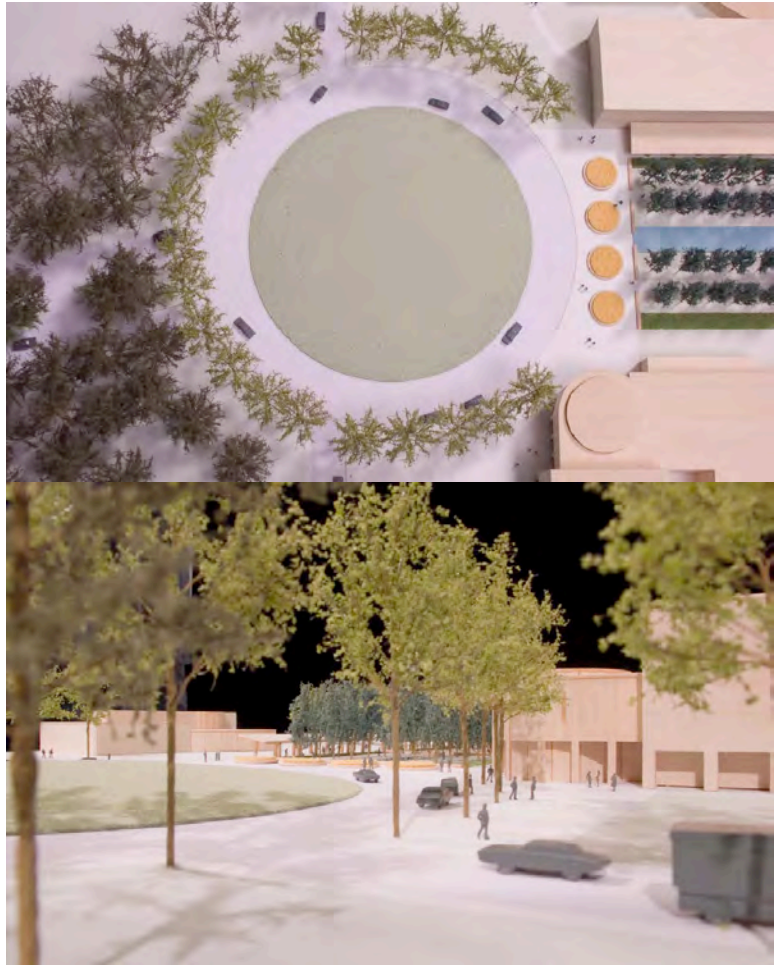
Water feature model photos



Special feature: Chess board plaza



Entry circle design character images



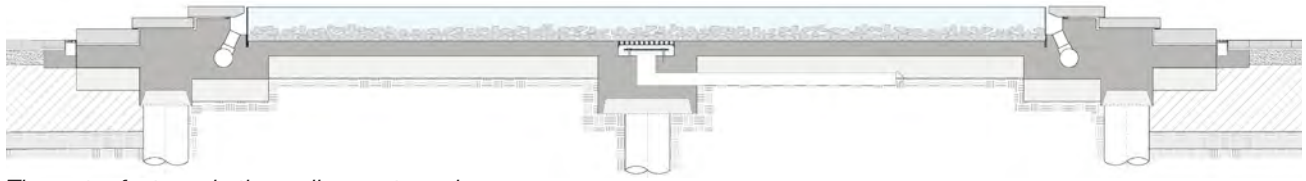
Entry circle model photos



Entry circle plan

Chapter 7

LANDSCAPE ELEMENTS



The water features in the mall are set on piers

Geotechnical

The construction of new building and landscape elements is informed by the local geotechnical conditions found on site. Engineering reports indicate that the geologic stratum generally consists of surficial clay soils above a limestone base. Geotechnical recommendations suggest that landscape construction requires a specific approach to mitigate the expansive characteristics of the native soils. Although these construction techniques require a higher initial financial commitment, the resulting installations will be better resistant to damage from soil movement.

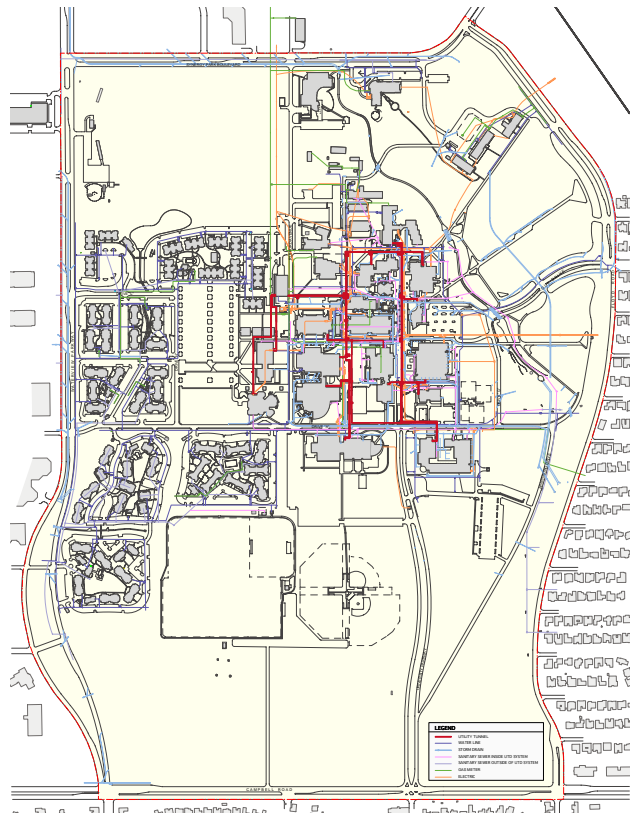
Landscape paving should be built using construction detailing that reflects the requirements of the local soil condition. For example, in the Phase I landscape project (see Chapter 6: Implementation), geotechnical engineering reports recommended that fixed landscape paving be built upon a minimum four feet of moisture conditioned subgrade soil which reduces the potential for movement and consequent damage to the paving. Above the reworked soil, a layer of flexible base below a geogrid provides additional structural support. Rigid paving, such as concrete, will be constructed with a subbase stabilized with lime, which serves to increase the support value of the subbase material.

Substantial, fixed landscape structures, including pier supported elements and walls, also require specific construction techniques to mitigate any potential damage due to soil movement. In the Phase I project, geotechnical engineering reports recommended that these type of landscape elements be built utilizing structurally engineered systems, including structural suspended slabs, and piers with pier caps and grade beams to avoid the potential for movement from subgrade soils.

Water features require a more intensive structural system to diminish the potential for settlement and instability which could result in failure of a feature entirely. The water feature proposed in the Phase I construction is constructed on a structurally suspended slab which is separated from the native soils by a 12" void space, thereby minimizing the possibility of impact from soil heave or contraction.



Topographic map



UTD -Utility map- status 2006 (unconfirmed)

Grading and Drainage Considerations

Grading design involves the artful recontouring of the ground surface in order to achieve proper stormwater drainage. A parallel requirement of grading design is to comply with local and federal building codes, such as the Americans with Disabilities Act (ADA). These building codes define parameters for “barrier-free” access to public spaces for individuals with disabilities; in the outdoor public realm, these codes influence the design of sidewalks, stairs, ramps and the provision of equal access to public amenities, among others.

Grading to control storm water collection should be designed to avoid the collection or ponding of storm water which could lead to property damage or hazard to humans. Paving surfaces should be graded so that storm water is directed into either local retention areas or to the storm water collection system. (See Drainage section below.)

The construction of new outdoor public spaces and the renovation of existing spaces will need to comply with local and federal law for barrier-free access. Unlike some campuses located in hilly terrain, the UTD campus enjoys rather level topography, thereby compliance with these regulations should not be difficult.



Drainage channel at University Parkway at the current mock up

Sustainability

Campus environments often serve as laboratories for new technologies and organizational systems. This has been very true for sustainability goals and many universities and colleges have led the way for other building programs. Some universities find that their leadership in sustainable ideas is a great tool for recruiting students. They find that sustainability is seen as necessary for students looking towards the future.

Sustainability is most commonly measured by the LEED rating system for building projects. Broader understandings of sustainability frameworks for site development such as the recently developed Sustainable Sites Initiative are also metrics that can be used. Above all, sustainability for campus environments requires that the campus develop a sustainability framework that is appropriate to the site, climate, university policies, and local culture. The framework can then be a guiding tool for the development of the campus.

Many of the elements of the Landscape Site Development Plan fulfill the goals of sustainability for the built environment: designing and constructing landscape projects which are meant to be long-lasting with the economic use and little detriment to the earth's resources. Careful consideration should be given to design, materials selection, and construction detailing and methods in order to achieve a high level of sustainability.

The design for the Landscape Site Development Plan achieves sustainability on a macro-level: it is designed to shift UTD's campus from a car-oriented campus to a pedestrian-oriented campus with more on-campus housing. This conversion will reduce the amount of vehicle trips to the campus per day, thereby reducing the detrimental impact of vehicle use to the environment, both on- and off-campus.

Sustainable campus development requires the ability to meaningfully change and reduce the cumulative impacts to water and land resources within the institution's boundaries. With this in mind, UTD's landscape should, in general, incorporate native plants and restrict high maintenance gardens and turf grass to designated areas. This will reduce the need for pesticides and chemical fertilizers that are carried into the water system. Recycling the landscape trimmings into compost and mulch will act as a source of fertilizer to amend soils and eliminate waste. Innovative storm water improvements should be utilized to reduce the impacts of increased runoff water and pollutants from roofs and parking areas. Storm water can be collected and used for irrigation purposes.

Sustainability should be considered in the material selection of landscape areas, whether it be planting or hardscape materials. Where possible, planting materials should be local species which are native to the ecological conditions of the Dallas region and/or acclimated to the nuances of the regional or site-specific environment. Newly installed irrigation systems should use up-to-date irrigation techniques to minimize water waste. These techniques include establishing irrigation zones based upon plant material, context and solar orientation. Irrigation should be controlled using a rain shut-off device and a soil moisture sensors. Hardscape materials, including horizontal paving materials and vertical wall materials, should be selected with consideration to impacts to climate, such as heat gain in vast fields of paving, and carbon footprint.

Lastly, construction detailing should consider sustainability on a micro-level. The design of paving systems and planting methods which are meant to be long-lasting and durable are a first step towards achieving sustainability. The detailed design of landscape elements should use methods that increase the life span of a built element.



Existing mall planting



Walkway north of Green building



Walkway north of library



Creek planting at Floyd Road

Planting

The role of planting on the UTD campus will be to improve the aesthetic quality of the campus and provide comfort and visual interest for the pedestrian. While all plants selected must be site specific, their highest function is to provide character at both a project specific and campus scale.

On a campus scale, the planting should clearly convey the gesture of the landscape master plan design, including dense already completed riparian planting along designated drainage ways, and canopy-tree planting along the pedestrian walkways of the campus core.

Plant materials should be appropriate to the location, climate, and xeriscaping regulations of the Dallas/Ft. Worth Metroplex area. The region is prone to drought conditions and plant material selections for the campus should be confirmed for drought resistant qualities.

As the elements of Landscape Master Plan begin to be constructed, care should be taken to the preservation and management of existing vegetation on campus. Prior to any new construction, existing vegetation deemed worthy of preservation must be brought to its best state of health if it is to remain in the new design. A program of disease treatment, fertilization, and pruning must be undertaken in adequate time to provide for maximum plant health. The plants must be adequately protected with particular attention to maintenance during the construction process.

Proposed vegetation must be well researched and reviewed for its longevity. A careful balance of maintenance expectations, campus wear and tear, replacement budgets, and species resilience will need to be confirmed for all plant material selections.



Salted concrete



Saw cut concrete



Stamped concrete



Concrete unit paver

Paving

A variety of paving can help distinguish one area on campus from another. Areas of importance may have paving with a special material, such as stone, or a special color and finish, such as a stamped pattern on integrally colored concrete. Pedestrian walkways within the campus core should be paved in the same material to make the pedestrian circulation system more legible. In contrast to these pedestrian walkways, special paving in plazas or along the malls can visually demarcate these areas as special and distinct.

Long-term maintenance of paving materials is a special consideration on a university campus. Paving materials must be able to withstand heavy use and be long-lasting



Some landscape furnishings should be implemented campus-wide

Site Furniture

A palette of landscape furnishings can help unify the campus as well as distinguish places of importance. In all cases, site furnishings should be durable and easy to maintain. The furniture highlighted below have been chosen in collaboration with UTD maintenance personnel.

In the case of site furnishings that are needed throughout campus, one furnishing type should be selected and used campus-wide. For ease of maintenance and to help create a campus identity, trash receptacles, pedestrian and vehicular pole lighting, and bike racks should be used throughout the campus. These furnishings will be easy to identify and maintain.

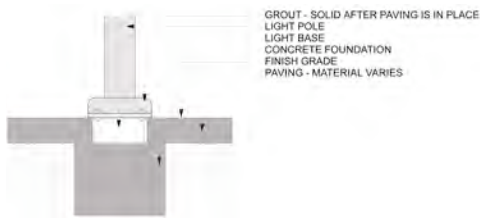
Areas of significance should have site furnishings that are unique in order to establish a feeling of importance and singularity of space. For example, in the Phase 1 landscape project, unique furnishings, including movable café tables and chairs, were selected to distinguish this area on campus from others.



Areas of importance shall receive unique landscape furnishings



Light base in planted areas



Light base in paved areas



Post top with disc

Site Lighting

The primary goal of most exterior lighting systems is functional: to provide adequate light for safety and security. Additionally, lighting serves an aesthetic purpose by establishing an identity for the campus particularly at nights. A comprehensive lighting strategy for the campus must establish this identity, reinforce a perception of safety and security, facilitate both vehicular and pedestrian way finding, and simplify maintenance.

The goal is a uniform and consistent site lighting system to reinforce a roadway and path design which seamlessly connects across the campus, thus allowing vehicles and pedestrians to access virtually all campus facilities and amenities via a network of well lit, secure, and inviting roads and pathways.

Lighting For Safety and Security

The proposed interconnecting circulation system is composed of several different types of pedestrian paths and vehicular roadways, as well as differing contextual conditions. Given the level of variation and the campus' overall scale, it is imperative that a base layer of lighting on the primary pathways through campus be dedicated to creating a sense of safety and security with special attention paid to the various approaches to each building both from a pedestrian and a vehicular perspective. Additionally, exterior fixture type and placement near building entries will take into account egress code requirements as apply to illumination levels.

Two main lighting factors that reinforce a sense of safety and security are adequate horizontal illuminance at the ground for navigation of pathways, and adequate vertical luminance at surfaces such as building forms, building entries, people, signage and landscape planting to provide visual context.



Mall-light spacing between the trees

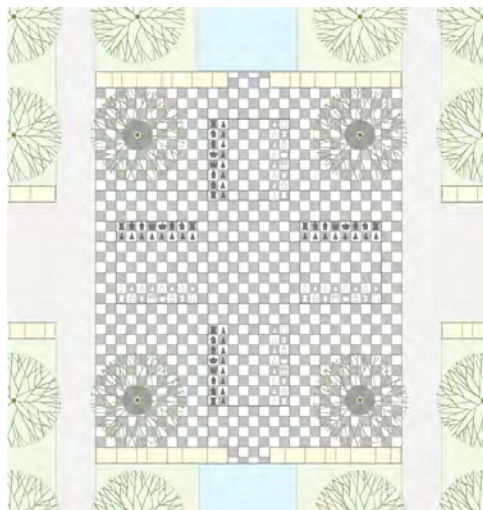


Clock Wall at the Student Union

Nighttime Identity

With a variety of buildings and exterior spaces across campus, one important function of the lighting system will be to clearly identify the primary pathways, site amenities, and building entrances by using light in concert with the design of hardscape, signage and planting systems. While each pathway will have its own layout of lighting fixtures, the consistent implementation of a hierarchy of illumination levels, sources (lamp type), and fixtures throughout will

strengthen the visual identity of the campus and facilitate use, especially for first-time and infrequent users.



Chess plaza at the mall

Special Features

Special design features help create a sense of place for disparate areas throughout a campus. Special features should be unique to that area on campus and reflect the particular attributes or character of the area, whether it a naturalized creekside zone or an area home to a particular academic discipline. The Phase I landscape project (See Chapter 7: Implementation) should be reviewed as a case study for special design features.

Water Features

Due to the regional climate and low water resources, the use of water features on the UTD campus should be minimally used and reserved for areas of importance on campus. As the campus shifts to a pedestrian-oriented framework, water features should be designed to appeal and relate to the pedestrian. Water features should aspire to provide climactic relief, if possible, from the region's extreme heat.



Water feature - linear pool

Chapter 9

APPENDIX

Consultant Team

Landscape Architecture

*PWP Landscape Architecture
739 Allston Way
Berkeley, CA 94710
Ph: 510-849-9494
Fax: 510-849-9333*

Architectural Planning Consultant

*David Neuman
860 Flordon Drive
Charlottesville, VA 22901
Ph: 434-293-5889*

Civil and Structural Engineers

*Charles Gojer and Associates, Inc.
11615 Forest Central Dr. #303
Dallas, TX 75243
Ph: 214-340-1199
Fax: 214-328-8053*

Site Lighting

*Horton Lees Brogden Lighting Design
300 Brannan Street, Suite 212
San Francisco, CA 94107
Ph: 415-348 8273 x 211
Fax: 415- 348 8298*

Horticulture

*Dr. Robert Moon
2526 Sir Turquin Drive
Lewisville, TX 75056
Ph: 972-492 6682
Fax: 972-492 2795*

Traffic and Parking

*Fehr and Peers
100 Pringle Avenue, Ste 600
Walnut Creek, CA 94596
Ph: 925-930-7100 x110*

Planting

Selected Plants for Phase 1



Vine–Wisteria



Magnolia



Agave



Bur Oak

Academic Mall

Vine

Wisteria floribunda

Wisteria

Grand Allee

Magnolia grandiflora

Magnolia

Groundcover Planting

Euonymus fortunei ‘Coloratus’

Purple Wintercreeper Euonymus

Dalea greggii

Trailing Indigo Bush

Trachelospermum asiaticum

Asian Jasmine

Accent planting

Cercis canadensis var. *texensis*

Texas Redbud

Pinus pinea

Italian Stone Pine

Agave americana

Agave

Pedestrian Walkways / Tree lined corridors

Quercus shumardii

Shumard Oak

Quercus macrocarpa

Bur Oak

Quercus shumardii

Red Oak

Quercus virginiana

Live Oak

Ginkgo biloba

Ginkgo

Entry Grove Plant Material

Canopy Trees

Ulmus crassifolia

Cedar Elm

Quercus

various species

Acer leucoderme

Chalk Maple

Carya illinoensis

Pecan

Pinus eldarica

Afghan Pine

Understory Trees

Ilex vomitoria

Yaupon

Rhus lanceolata

Prairie Flameleaf Sumac

Ilex decidua

Possomhaw

Ungnadia speciosa

Mexican Buckeye

Cercis Canadensis var. *texensis*

Texas Redbud

Sophora affinis

Eve's Necklace

Prunus mexicana

Mexican Plum

Cornus drummondii

Roughleaf Dogwood



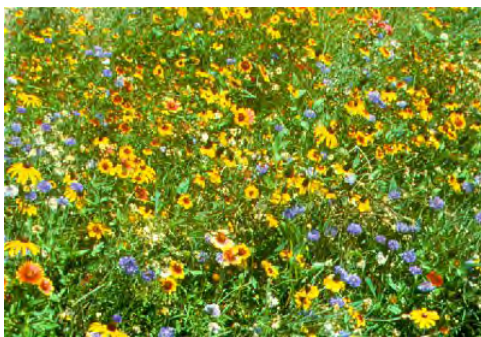
Shumard Oak



Inland Sea oats



Hedge rows



Wildflowers



Wildflowers

Understory shrubs

<i>Callicarpa americana</i>	American Beautyberry
<i>Cercis Canadensis Var. Mexicana</i>	Mexican Redbud
<i>Cornus Drummondii</i>	Roughleaf Dogwood
<i>Rhus Lanceolata</i>	Prairie Sumac
<i>Ungnadia Speciosa</i>	Mexican Buckeye

Grasses

<i>Chasmanthium Latifolium</i>	Inland Sea oats
<i>Muhlenbergia Capillaris</i>	Gulf Coast Muhly Grass
<i>Panicum Virgatum</i>	Prairie Switchgrass
<i>Pennisetum Alopecuroides</i>	Hameln Dwarf Fountain
<i>Schizachyrium Scoparium</i>	Little Bluestem
<i>Sporobolus Heterolepis</i>	Prairie Droppseed

Campbell and Synergy Park Boulevard Frontage

Hedgerow

<i>Magnolia grandiflora 'Little Gem'</i>	Little Gem Magnolia
<i>Ilex vomitoria 'Pride of Houston'</i>	Yaupon Holly

Wildflowers

<i>Rudbeckia Amplexicaulis</i>	Clasping Cone Flower
<i>Gaillardia Pulchella</i>	Indian Blanket
<i>Ratibida Columnaris</i>	Mexican Hat
<i>Calliopsis Coreopsis tinctoria</i>	Plains Coreopsis
<i>Echinacea Purpurea</i>	Purple Cone Flower
<i>Salvia Coccinea</i>	Scarlet Sage

Annual wildflower spring and summer mix

Short Specifications
Manufacturers and Suppliers -Phase 1

Site Furniture

Trash and Recycling Receptacles:

Victor Stanley, Dunkirk, MD; (800) 368-2573; www.victorstanley.com. - Ironsites Series Model S42 with standard lid, powder coated finish, VS bronze in color, and with 3 in-line anchor hole mount.

For the Recycling Receptacles:

Ironsites Series Model S42 with recycle package lid, powder coated finish VS Bronze in color, and with 3 in-line anchor hole mount.

Bike Racks:

Creative Pipe, Inc., Rancho Mirage, CA; (800) 644-8467; www.creativepipe.com. - Stainless steel inverted “U” rack with #4 satin finish, model WU20-E-SS and with standard embedment anchor mount.

Landscape Brands, 211 North Lindbergh BLVD., St. Louis, MO 63141; (800) 231-1327; www.landscap brands.com. - LBR7PVCSURF High Style Bile Rack, plastisol coated, color: vanilla.

Chairs and Tables:

Gardenside Ltd., Berkeley, CA; (888) 999-8325; www.gardenside.com. Monterey Dining Armchair #3530, FSC certified teak, unfinished. Provide quantity of 40. Monterey Dining Chair #3010, FSC certified teak, unfinished.

Kentfield Café Table #1308, PSC certified teak, unfinished.

Tree grate:

Urban Accessories, phone: (253) 572-1112 ext 19 fax: (253) 572-1119/ www.urbanaccessories.com. Square Tree and Vine Grates: ASTM B 221, aluminum square Jamison type, custom sizes.

Frames: Urban Accessories, custom “PA” type frame, ASTM B 221, aluminum.

Round Tree Grates: Urban Accessories, ASTM B 221, aluminum 8 feet diameter round rainbow tree grate with ASTM B 221, aluminum “s” frame and cross support bars.

Drains:

Urban Accessories, phone: (253) 572-1112 ext 19 fax: (253) 572-1119/ www.urbanaccessories.com. Aluminum, Jamison type.

Bollard:

Quick Crete, Products Corp., 731 Parkridge Ave., Norco, CA 92860; (951) 737-6240; www.quickcrete.com. - Square lighted bollard - QS-1BLB, standards gloss sealer.
Or: Painted pipe bollards also acceptable.

Paving.

Sidewalks:

Cast in place Concrete Paving: Concrete: 4,000psi compressive strength with type I/II cement, Scofield Chromix Admixture, Autumn Beige color, light sandblast finish.

Chess Plaza:

Sand-Set Square Stone and Precast Concrete Unit Pavers.
Square Stone Pavers: Quarry S/E, Seattle, WA; (206) 522-8670.
Long Precast Concrete Unit Pavers. - : Britannia black granite, 18-3/16 inches by 18-3/16 inches by 3 inches thick, flamed finish.

Square Precast Concrete Unit Pavers: Hanover Architectural Products, Hanover, PA; (717) 637-0500; www.hanoverpavers.com. - 18-3/16 inches by 18-3/16 inches by 3 inches thick, beveled edges, light sandblast finish, natural color

Library Plaza:

Long Precast Concrete Unit Pavers: Stepstone, Inc.; (800) 572-9029; www.stepstoneinc.com. - 17-7/8 inches long by 2-7/8 inches wide by 4 inches thick, medium sandblast finish, Agave Green No. 1812.

Existing Paving:

Lattimore Design Mix #7331 - for repairs only; not to be put into new areas.

Features:

Stone Walls:

AG&M Architectural Granite & Marble, Inc., Austin, TX; (512) 263-7625, (800) 937-5016. Canyon Gold sandstone slabs, 5-1/2 inches thick and 36 inches wide, 6 split sides for straight walls, 4 split sides for top course of curved stone walls, 5 split sides for lower courses of curved walls, rock pitched radius at front and back of top course of curved walls and rock pitched radius at front of lower courses of curved walls.

Linear Water Feature Pool Bottom Stone:

AG&M Architectural Granite and Marble, Inc., Austin, Tex., (512) 263-7625; www.agmgranite.com. Basalt pavers, 3cm thick, sawn face, natural edges. The following percentages of stone sizes shall be provided per individual pools: 30 percent 10-inch diameter, 30 percent 12-inch diameter, 25 percent 16-inch diameter and 15 percent 20-inch diameter.

Circular Water Feature Pool Bottom Stone:

AG&M Architectural Granite and Marble, Inc., Austin, Tex., (512) 263-7625; www.agmgranite.com. Pennsylvania slate clear, 24 inches by 24 inches by 1 inch thick, cleft top, sawn sides, sawn bottoms

Short Specifications
Lights Fixtures - Phase 1

UT Dallas - Campus Landscape Enhancement Project

Horton Lees Brogden Lighting Designr

Light Fixture Specification:

2/22/2008:

FOR REVIEW - NOT FOR CONSTRUCTIONr

Revised 10/07/2009r

E1r

Metal halide area light with cutoff optics on 12' tall pole:

Location: Pathways:

Lamping: (1) - 150-watt T6 metal halide (14000 lumens, 12000 hrs rated life, 3000K, 85: CRI) (Philips CDM150/T6/830):

Ballast: Integral Standard/Magnetic. Ballast is located in base of pole.:

Voltage 277V:

Manufactu Bega 8309MH-RAL9007-277V with 906HR-RAL9007:

Alternates: No known equal :

Remarks: 1. Per Landscape Architect fixture head and pole shall have custom color: RAL9007.:
2. Fixture shall have cutoff optics with less than 2% uplight.:
3. Refer to landscape drawings for exact location of each fixture.:
4. Contractor to coordinate footing and mounting details with Landscape Architect: / Structural Engineer.:
5. Contractor to coordinate required pole thickness with EPA ratings and: Manufacturer.:
5. Fixture to be mounted to a 12' tall pole.:
6. Fixture to be U.L. listed and labeled "suitable for wet locations.":

UT Dallas - Campus Landscape Enhancement Project

Light Fixture Specification:

Horton Lees Brogden Lighting Designr

2/22/2008:

FOR REVIEW - NOT FOR CONSTRUCTIONr

Revised 10/07/2009r

E1A

Metal halide area light with cutoff optics on 12' tall pole with GFCI outlet:

Location:

Pathways:

Lamping:

(1) - 150-watt T6 metal halide (14000 lumens, 12000 hrs rated life, 3000K, 85: CRI) (Philips CDM150/T6/830):

Ballast: Integral Standard/Magnetic. Ballast is located in base of pole.:

Voltage

277V:

Manufactu

Bega 8309MH-RAL9007-277V with 906HR-RAL9007- GFCI at 24" above finished: grade to center line:

Alternates:

No known equal :

Remarks:

1. Per Landscape Architect fixture head and pole shall have custom color: RAL9007.:
2. Fixture shall have cutoff optics with less than 2% uplight.:
3. Refer to landscape drawings for exact location of each fixture.:
4. Contractor to coordinate footing and mounting details with Landscape Architect: / Structural Engineer.:
5. Contractor to coordinate required pole thickness with EPA ratings and: Manufacturer.:
5. Fixture to be mounted to a 12' tall pole.:
6. Fixture to be U.L. listed and labeled "suitable for wet locations.":
7. Manufacturer shall provide exterior rated GFCI and weatherproof enclosure: which meets applicable codes. Contractor shall provide Manufacturer with specific: code requirements prior to shop drawing preparation. Per the Landscape: Architect, the centerline of the GFCI is to be located at 24" above finished grade.:
8. Manufacturer shall provide a detailed drawing for pole and fixture head,: including the GFCI location as part of the shop drawing submittal.:
9. The hinge at the base of the pole is to be installed on the opposite side of pole: to the GFCI.:

UT Dallas - Campus Landscape Enhancement Project

Light Fixture Specification:

FOR REVIEW - NOT FOR CONSTRUCTION

Horton Lees Brogden Lighting Designr

2/22/2008:

Revised 10/07/2009r

E2r

Metal halide roadway light with full cutoff optics, IESNA Type III distribution on 25' tall pole:

Location: Circular turnaround, Roadways:

Lamping: (1) - 250-watt ED-28 clear metal halide (20500 lumens, 10000 hrs rated life, 4000K, 65 CRI) (Philips MH250/U):

Ballast: Integral Electronic:

Voltage 277V:

Manufactu Invue ICM-250-MH-277-3S-(custom color) with ART-(shaft: diameter)-L25N-(custom color)-C-VA1012-(color):

Alternates: Or equal :

Remarks: 1. Custom color to be confirmed by Landscape Architect.:
2. Fixture shall have full cutoff optics and IESNA Type III distribution.:
3. Refer to landscape drawings for exact location of each fixture.:
4. Contractor to coordinate footing and mounting details with Landscape Architect / Structural Engineer.:
5. Contractor to coordinate required pole thickness with EPA ratings and Manufacturer.:
6. Fixture to be mounted to a 25' tall pole.:
7. Fixture to be U.L. listed and labeled "suitable for wet locations.":

E2A

High pressure sodium roadway light with full cutoff optics, IESNA Type IIIr distribution on 30' tall poler

Location:r Campbell Road Entryr

Lamping:r (1) - 250-watt ED-18 high pressure sodium (27000 lumens, 24000 hrs rated life,r K, 21 CRI) (Philips C250S50/ALTO)r

Ballast: Integral Electronicr

Voltage:r Vr

Manufacturer:r Invue ICM-250-HPS-277-3S-(custom color) with ART-(shaft: diameter)-L30N-(custom color)-C-VA1012-(color)r

Alternates:r Or equal :

Remarks:r . Custom color to be confirmed by Landscape Architect.r
. Fixture shall have full cutoff optics and IESNA Type III distribution.r
3. Refer to landscape drawings for exact location of each fixture.r
4. Contractor to coordinate footing and mounting details with Landscape Architectr Structural Engineer.r
5. Contractor to coordinate required pole thickness with EPA ratings andr Manufacturer.r
6. Fixture to be mounted to a 30' tall pole.r
. Fixture to be U.L. listed and labeled "suitable for wet locations."r

UT Dallas - Campus Landscape Enhancement Project

Light Fixture Specification:

FOR REVIEW - NOT FOR CONSTRUCTION

Horton Lees Brogden Lighting Design

2/22/2008:

Revised 10/07/2009

E3r

Metal halide downlight mounted to underside of trellis structure:

Location: Trellis:

Lamping: (1) - 20-watt CMH MR16 metal halide (1000 lumens, 9000 hrs rated life, 3000K, 80 CRI, 25 deg beam, 2900 CBCP) (G.E. CMH20MR16/830/FL):

Ballast: Integral Electronic:

Voltage 277V:

Manufactu HK Lighting ZX18iR-A-CM5-PCC-LV18 with 18" long flexible conduit lead from: back of fixture to connect to remote junction box:

Alternates: Erco 85044.023 - custom finish -18" long flexible conduit lead:

Remarks: 1. Fixture shall have an integral ballast.:
2. Fixture to be mounted directly to trellis. Manufacturer is to provide fixture with: 18" long flexible conduit lead to connect fixture on underside of trellis beam to: mote junction box located on top of trellis beam structure. The conduit is to be: concealed inside beam structure.:
3. Refer to landscape drawing for mounting information.:
4. Fixture to be U.L. listed and labeled "suitable for wet locations.".:
5. Custom color to be confirmed by Landscape Architect.:
6. Fixture to be provided with a hex cell louver.:

UT Dallas - Campus Landscape Enhancement Projectr

Light Fixture Specification:

FOR REVIEW - NOT FOR CONSTRUCTIONr

Horton Lees Brogden Lighting Designr

2/22/2008:

Revised 10/07/2009r

E4r

Description:	3ft long dimmable fluorescent wet location strip light continuously mounted on: vertical steel column:
Location:	Fountain Mist Column:
Lamping:	(1) - 21-watt T5 fluorescent (2100 lumens, 25000 hrs rated life, 3000K, 85 CRI): (Philips F21T5/830/ALTO):
Ballast/Transforme	Ballast: Integral Dimming. Universal dimming ballast, operates to 32-degrees F.:
Voltage	277V:
Manufactu	Paramount CO-1-21T5-3-S4-D2/Universal 32F-S4-M3 - nominally 18ft long made: p from (6) 3ft long fixtures - WO-277V/60Hz:
Alternates:	No known equal :
Remarks:	<ol style="list-style-type: none">1. Contractor is to verify voltage with electrical drawings.:2. Refer to landscape drawings for mounting information. Light fixture is to be: nominally 18ft long, comprised of six (6) 3ft long fixtures continuously mounted: vertically on central steel column inside circular mesh structure. Fixtures to be: connected to each other with a joiner band provided by Manufacturer.:3. Fixtures are to be through wired with conduit entering into bottom 3ft fixture: section from a remote junction box. Each 18ft long fixture length is to have it's own: conduit feed. The Contractor is to coordinate the conduit and junction box: specifications and locations with the Electrical Engineer and Landscape Architect: prior to installation. The junction box is to be remotely located inside the fountain.:4. A full mockup to be reviewed by Landscape Architect and Lighting Designer is: quired as part of the shop drawing review process. Mockup is to include outer: structural mesh column and mist nozzle structure. Mockup is to include four 6ft: long working light fixtures, cords and plugs as necessary. Landscape Architect is: to determine location of mockup.:5. All metal components of fixture are to be made of 304 stainless steel.:6. Fixture is to have a translucent white acrylic lens.:7. Fixture is to have a dimming ballast and lamp that can operate between: 30-degrees F and 100-degrees F ambient air temperature.:8. Fixture to be U.L. listed and labeled "suitable for wet locations" and is to be able: to withstand a continuous spray of mist.:9. Manufacturer is to provide fixture with a weep hole in bottom fixture only to: allow for any water that gets into fixtures to drain out.:10. Fixture to be continuously row mounted and is to be provided with joiner bands: as necessary per Manufacturer installation instructions. Contractor is to provide: Manufacturer with all total row lengths required per landscape and electrical: drawings prior to shop drawing preparation.:11. Manufacturer is to provide full detailed drawings indicating total lengths of: continuous rows and all required components and accessories as part of shop: drawing submittal.:

UT Dallas - Campus Landscape Enhancement Projectr

Light Fixture Specification:

Horton Lees Brogden Lighting Designr

2/22/2008:

FOR REVIEW - NOT FOR CONSTRUCTIONr

Revised 10/07/2009r

E5r

Description: 4ft long chain hung fluorescent strip light with wireguard:
Location: Pump rooms:
Lamping: (2) - 32-watt T8 fluorescent (2950 lumens, 24000 hrs rated life, 3000K, 85 CRI):
(Philips F32T8/TL830/ALTO):
Ballast/Transforme Ballast: Integral:
Voltage hall be specified by Electrical Engineer:
Manufactu Lithonia C232120-GEB--WGCUN-HC36:
Alternates: Daybrite, Columbia, Metalux :
Remarks: 1. Fixture is specified by Electrical Engineer. Electrical Engineer is to review fixture:
submittal for approval during shop drawing process.:
2. Fixture is to be provided with chain hanging assembly and wireguard.:
3. Contractor is to confirm mounting height of fixture with Electrical Engineer:
during installation.:
4. Contractor to provide all necessary lengths, parts, and components for:
complete installation.:
5. Contractor is to verify voltage with electrical drawings prior to order.:

E6r

Recessed in-grade mounted metal halide adjustable uplightr
Location:r Flag poles at campus entryr
Lamping:r (1) - 150-watt T6 metal halide (14000 lumens, 12000 hrs rated life, 3000K, 85r
CRI) (Philips CDM150/T6/830)r
Ballast: Integral Electronicr
Voltage:r Vr
Manufacturer:r ALLSCAPE SL-43-150MH-T6-277-SPT-F-IGS-LFSS-AHOTr
Alternates:r BK Lighting "Tenaya", Hydrel, or approved equal r
Remarks:r . Fixture to be U.L. listed and labeled "suitable for wet locations."r
. Fixture to be provided with an internal glare shield.r
3. Fixture to be provided with a stainless steel lens frame.r
4. Fixture shall have a spot optic.r
5. Fixture to be provided with an 'AIM-HOT' mechanism for hot aiming.r
6. Fixture to be provided with a clear flat lens.r

UT Dallas - Campus Landscape Enhancement Projectr

Light Fixture Specification:

FOR REVIEW - NOT FOR CONSTRUCTIONr

Horton Lees Brogden Lighting Designr

2/22/2008:

Revised 10/07/2009r

E7r

ft long surface mounted fluorescent asymmetric uplightr

Location:r Campus entry signr

Lamping:r (1) - 17-watt T8 fluorescent (1375 lumens, 24000 hrs rated life, 3000K, 85 CRI)r
(Osram Sylvania FO17/830/XP/ECO)r

Ballast: Integral Electronic. Osram Sylvania QHE1X32T8/UNV ISL-SCr

Voltage:r Vr

Manufacturer:r Insight Lighting EX5-SMS-SA-T8-17W-2'-2-TBL-LV - Osram Sylvania
QHE1X32T8/UNV ISL-SCr

Remarks:r . Fixture to be U.L. listed and labeled "suitable for wet locations."r
. Fixture to be provided with a low ballast factor ballast as noted.r
3. Fixture shall have a black finish. Finish is to be confirmed by Landscaper
A chitect during shop drawing review pending final design of wall.r
4. Fixture to be provided with a louver painted to match luminaire to provide lateralr
cut off.r
5. Refer to landscape drawings for mounting information.r

E7A

50ft long continuous surface mounted fluorescent asymmetric uplightr

Location:r Campus entry signr

Lamping:r (12) - 25-watt T8 fluorescent (2475 lumens, 36000 hrs rated life, 3000K, 85 CRI)r
(Osram Sylvania FO32/25W/830/XP/SS/ECO (one lamp in cross section))r

(1) - 17-watt T8 fluorescent (1375 lumens, 24000 hrs rated life, 3000K, 85 CRI)r
(Osram Sylvania FO17/830/XP/ECO)r

Ballast: Integral Electronic. Osram Sylvania QHE1X32T8/UNV ISL-SCr

Voltage:r Vr

Manufacturer:r Insight Lighting EX5-SMM-SA-T8-32W/17W - 50' run length - 2-TBL-LV - Osramr
Sylvania QHE1X32T8/UNV ISL-SCr

Remarks:r . Fixture to be U.L. listed and labeled "suitable for wet locations."r
. Fixture to be provided with a low ballast factor ballast as noted.r
3. Fixture shall have a black finish. Finish is to be confirmed by Landscaper
A chitect during shop drawing review pending final design of wall.r
4. Fixture to be provided with a louver painted to match luminaire to provide lateralr
cut off.r
5. Refer to landscape drawings for mounting information.r
6. Fixture shall be a nominally 50ft long continuous run. Fixture to be comprised ofr
six 8ft long sections and one 2ft long sections to make up 50ft length. 2ft sectionr
shall be in the center of the run.r
. Manufacturer shall provide a detailed shop drawing for review by Lightingr
Designer. Shop drawing shall include all lengths, parts and components necessaryr
for complete 50ft run.r

UT Dallas - Campus Landscape Enhancement Project
Light Fixture Specification:
FOR REVIEW - NOT FOR CONSTRUCTION

Horton Lees Brogden Lighting Design
2/22/2008:
Revised 10/07/2009

E7Br

80ft long continuous surface mounted fluorescent asymmetric uplight

Location: Campus entry sign

Lamping: (20) - 25-watt T8 fluorescent (2475 lumens, 36000 hrs rated life, 3000K, 85 CRI)
(Osram Sylvania FO32/25W/830/XP/SS/ECO (one lamp in cross section))

Ballast: Integral Electronic. Osram Sylvania QHE1X32T8/UNV ISL-SC

Voltage: V

Manufacturer: Insight Lighting EX5-SMM-SA-T8-32W - 80' run length - 2-TBL-LV - Osram
Sylvania QHE1X32T8/UNV ISL-SC

Remarks:

- . Fixture to be U.L. listed and labeled "suitable for wet locations."
- . Fixture to be provided with a low ballast factor ballast as noted.
- 3. Fixture shall have a black finish. Finish is to be confirmed by Landscaper Architect during shop drawing review pending final design of wall.
- 4. Fixture to be provided with a louver painted to match luminaire to provide lateral cut off.
- 5. Refer to landscape drawings for mounting information.
- 6. Fixture shall be a nominally 80ft long continuous run. Fixture to be comprised of ten 8ft long sections.
- . Manufacturer shall provide a detailed shop drawing for review by Lighting Designer. Shop drawing shall include all lengths, parts and components necessary for complete 80ft run.

Specification - Landscape Maintenance

SECTION 320190 — LANDSCAPE MAINTENANCE PERIOD

PART 1 — GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Monitoring and Maintenance of Plant Material, Turf, Wildflower Meadows, Including Existing Trees to Remain.
 - 2. Monitoring and Maintenance of Irrigation Systems.
 - 3. Maintenance of Wood Chip Mulch.
 - 4. Maintenance of Tree Staking Systems.
 - 5. Monitoring and Control of Pests (insects, disease, mites and any other pathogen) on Plant Material, Turf, Wildflower Meadows Including Existing Trees to Remain.
 - 6. Monitoring of Watering on Plant Material, Turf, Wildflower Meadows Including Existing Trees to Remain.
 - 7. Application of Fertilizers and Weed Control on Plant Material, Turf, Wildflower Meadows Including Existing Trees to Remain.
- B. Related Sections:
 - 1. Section 328400, Planting Irrigation.
 - 2. Section 329113, Planting Soil Preparation.
 - 3. Section 329119.13, Topsoil.
 - 4. Section 329219, Lawn Seeding.
 - 5. Section 329221, Meadow Seeding.
 - 6. Section 329223, Lawn Sodding.
 - 7. Section 329300, Planting Materials.
- C. Unit Prices:
 - 1. Provide a unit price for each chemical application indicated in the Preliminary Chemical Application Schedule under Article 3.11 in this Section to establish a bid price.
 - 2. Provide a unit price for each fertilizer application, based on the preliminary fertilization programs indicated in this Section to establish a bid price.
 - 3. Unit prices shall be applicable for the cost of additional chemical and fertilizer applications required beyond the quantity of applications included in the bid and shall be applicable for crediting the Owner for applications included in the bid price which are not required by the Horticultural Consultant.
 - 4. Credit Owner for any chemical or fertilizer applications included in the bid price which are not required by the Horticultural Consultant.

1.2 REFERENCES

- A. ANSI — American National Standards Institute:
 - 1. Z60.1 — American Standard for Nursery Stock, Current Edition.
 - 2. A 300 — Trees, Shrubs, and Other Woody Plant Maintenance — Standard Practice.
- B. ASTM — ASTM International: D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

- C. ICBN — International Code of Botanical Nomenclature.
- D. ICNCP — International Code of Nomenclature of Cultivated Plants.

1.3 DEFINITIONS

- A. IPM — Integrated Pest Management: An approach to pest control that utilizes regular monitoring to determine if and when treatments are needed and employs physical, mechanical, cultural, biological and educational tactics to keep pest numbers low enough to prevent intolerable damage or annoyance. Least-toxic chemical controls are used as a last resort.
- B. Acceptance, Acceptable, or Accepted: Acceptance by the Architect/Engineer in writing.
- C. Excessive Compaction of Soil: Planting area soil compaction greater than 75 percent dry density, as determined by ASTM D 1557.
- D. Horticultural Consultant for Construction Period ~~Prior to One~~ **and until Commencement of Three-Year Maintenance Period**: Horticultural consultant employed by Architect/Engineer for Project.
- E. Horticultural Consultant for the ~~One Three-Year Maintenance Period and for a Two-Year Period Following the One-Year Maintenance Period~~ **after Date of Final Completion**: Horticultural consultant employed by Contractor to provide field quality control inspections and reports for project.
- F. Architect/Engineer: Landscape Architect employed by the Owner to provide professional landscape architectural services for the Project.

1.4 SUBMITTALS

- A. General Requirements: Refer to Division 1.
- B. Product Purchase and Delivery Documentation: Fertilizer: Within 5 working days of each application submit purchase orders, invoices and receipts showing supplier name and address, person who sold product, date of purchase, specific product purchased, quantity purchased, and delivery date.
- C. Maintenance Log:
 - 1. Maintain a daily record of work performed until Owner acceptance of maintenance.
 - 2. Include precipitation records from on-site rain gauge; time and duration of each water application; chemical and fertilizer applications; irrigation problems; drainage problems; soil temperatures; visual observations of plants, including lawn sod; mowing activity; tests performed; and moisture sensor readings.
 - 3. Make log available for review at any time by the Owner, the Horticultural Consultant, and the Architect/Engineer.
 - 4. At end of maintenance period, submit to the Owner a complete and chronologically organized maintenance log as a digital file, saved in Microsoft Office® format, and one printed copy.

- D. Documentation of Accepted Conditions: Within 7 working days after the Owner's acceptance of maintenance, submit color photographs and a written report documenting the Owner's accepted conditions of the plant material.
- E. Certificates: Certificate indicating chemical applicator is currently certified by the State of Texas for commercial application, name of applicator, and State of Texas license number.
- F. Plant Condition Inspection Reports: Plant inspection report documenting damage and signs of stress due to pests and disease, nutritional deficiencies, watering or any other problem submitted via e-mail to the Owner, the Architect/Engineer, and the Horticultural Consultant within 2 days of observation.
- G. Architect/Engineer and Horticultural Consultant Inspection Reports: Plant inspection report documenting damage and signs of stress due to pests and disease, nutritional deficiencies, watering or any other problem submitted via e-mail to the Contractor for immediate action within 24 hours to reverse problems.
- H. Test Reports: Soil test reports for soil samples taken from plant material (tree, shrub, ground cover, turf and wildflower meadow including existing trees to remain).

1.5 QUALITY ASSURANCE

- A. Landscape Maintenance Contractor Qualifications:
 - 1. Demonstrated experience in maintenance of commercial landscape projects.
 - 2. Demonstrated experience in landscape maintenance supervision, with experience and training in integrated pest management, turf management, entomology, pest control, soils, fertilizers and plant identification.
 - 3. Thoroughly familiar and trained in the work to be accomplished and perform the task in a competent efficient manner.
 - 4. Directly employs and supervises the Work force at all times.
 - 5. Must notify the Owner's Designated Representative of changes in supervision.
 - 6. Provide proper identification for landscape maintenance firm's labor force.
- B. Regulatory Requirements:
 - 1. Meet requirements of applicable laws, codes, and regulations required by authorities having jurisdiction over Work.
 - 2. Provide for inspections and permits required by Federal, State, or local authorities in furnishing, transporting, and installing of chemicals.
 - 3. Keep on site a record of all herbicides, pesticides, and fungicides used to include MSDS sheets and any information required by law such as wind speed at application time, rate of application and target pest, pathogen or weed. This information should be ready to submit upon request by law to any employee of the City, County, or State Regulatory Offices.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Plant Material: Meet requirements of Section 329300.

1.7 SITE CONDITIONS

- A. Environmental Requirements: Do not apply chemicals during windy conditions.

1.8 SEQUENCING AND SCHEDULING

- A. Work Schedule:
 - 1. Perform maintenance during normal working hours, except for emergencies.
 - 2. Be present at the project site 7 days per week including holidays, to perform specified maintenance.
- B. Chemical Applications:
 - 1. Notify the Owner's Designated Representative and Horticultural Consultant 48 hours in advance of required chemical applications.
 - 2. Obtain the Owner's Designated Representative's and Horticultural Consultant's approval of application schedule.

PART 2 — PRODUCTS

2.1 MATERIALS

- A. Replacement Plant Material:
 - 1. Match existing genus, species, cultivar and size.
 - 2. Meet requirements of Section 02930.
 - 3. Meet requirements of ANSI Z60.1, ICBN and ICNCP.
- B. Seed: Match existing genus, species, varieties and cultivars.
- C. Fertilizers for Trees: Depending upon soil nutrition based on soil tests, deep root fertilize all trees with a combination of PHC for trees 27-9-9 and Mycor Tree Injectable. Or apply InjectoFeed 32-7-7 and AgriPlex Micro-Mix 0-4-4 with 2-percent magnesium, 2-percent water soluble magnesium, 3-percent sulfur, 0.02-percent boron, 5-percent iron, 0.5-percent manganese, and 0.5-percent zinc.
- D. Fertilizer for Shrubs and Ground Cover: Fertilize with Anderson 18-6-12 (granular) or a 3-1-2 ratio such as 18-6-12 granular fertilizer with 50 percent of the available Nitrogen being slow-release Nitroform and 50 percent being slow-release Nutralene, Monoammonium phosphate as a phosphorous source, 13-percent sulfur, 4-percent calcium, 0.5-percent magnesium, 5-percent Ruffin iron, and 0.5-percent zinc.
- E. Fertilizer for Turf and Meadow Areas: Apply Anderson 18-6-12 (granular) or a 3-1-2 ratio such as 18-6-12 granular fertilizer with 50 percent of the available nitrogen being slow release Nitroform, 50 percent being slow release Nutralene, the phosphorous source being monoammonium phosphate, 13 percent sulfur, 4 percent calcium, 0.5 percent manganese, 0.5 percent magnesium, 5 percent Ruffin iron, and 0.5 percent zinc.
- F. Pesticides, Insecticides, Herbicides, Fungicides and Minor Element Packets: Legal commercial-quality non-staining materials with original manufacturers' containers, properly labeled with guaranteed analysis, least toxic required.
- G. Replacement Staking Materials: Same as original installation.

- H. Wood Chip Mulch: As specified in Section 329300.

PART 3 — EXECUTION

3.1 PREPARATION

- A. Protection of Existing Conditions:
1. Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, plant materials and walks on or adjacent to the site of the Work.
 2. Use every possible precaution to prevent excessive compaction of planting area soil within or adjacent to the areas of Work.
 3. Provide barricades, fences or other barriers to protect existing conditions from damage during maintenance operations.
 4. Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants.
 5. Submit written notification of damaged plants and structures to the Owner's Designated Representative immediately.

3.2 GENERAL MAINTENANCE

- A. Maintenance Period:
1. Continuously maintain nursery-grown and field-collected plant material from time of plant delivery, during progress of Work, and for a minimum period of ~~4-year~~ **3 years** after date of Final Completion to include all weekends and holidays until the Owner accepts maintenance responsibility of plant material.
 2. Continuously maintain irrigation system during progress of Work, and for a minimum period of ~~4-year~~ **3 years** after date of Final Completion to include all weekends and holidays until the Owner accepts maintenance responsibility of the plant material.
 3. Continuously maintain existing trees to remain from time of construction commencement, during progress of Work, and for a minimum period of ~~4-year~~ **3 years** after date of Final Completion to include all weekends and holidays, until the Owner accepts maintenance responsibility of plant material.
 - ~~4. Continuously maintain transplanted existing trees from time of installation, during progress of Work, and for a minimum period of 1 year after date of Final Completion to include all weekends and holidays, until the Owner accepts maintenance responsibility of the plant material.~~
- B. Integrated Pest Management: Employ principles of integrated pest management for each aspect of maintenance.
- C. Dust Removal: Continuously remove construction dust from all plant material from time of plant delivery, during progress of Work, and for a minimum period of ~~4-year~~ **3 years** after date of Final Completion to include all weekends and holidays until the Owner accepts maintenance responsibility of plant material.

3.3 TREE MAINTENANCE

- A. General Watering:

1. Using a soil sample tube, tensiometers and soil probe, check rootball moisture and surrounding soil moisture at representative plants at least twice a week.
 2. Maintain watering basins around trees and shrubs if required to adequately apply water to root zones.
 3. Open basins to allow surface drainage away from the root crown when excess water accumulates and restore watering basins when needed to adequately water root balls.
 4. Remove watering basin berms at the end of the maintenance period and form mulch area around trees as indicated on the Drawings.
 5. Adjust frequency and length of time for watering cycles according to changing soil and weather conditions.
 6. When some plants but not every plant within a valve zone require supplemental water due to varying soil or microclimate conditions, apply supplemental water to watering basins by hand using a hose and water wand to break the water force.
 7. Do not permit crown roots to become exposed to air through dislodging of soil and mulch.
 8. Maintain depth of mulch to reduce evaporation and frequency of watering.
- B. Settled or Leaning Plants: Reset plants to proper grades or upright position when weather and soil conditions permit.
- C. Weed Control:
1. Keep mulched areas between plants and watering basins weed free.
 2. As a last resort use least toxic herbicides.
 3. Avoid frequent soil cultivation that destroys shallow roots.
 4. When applying any weed control, follow all label instructions for rates and application instructions. Do not apply against label.
- D. Preliminary Fertilization Program to Establish Bid Price:
1. Fertilize trees on February 1, April 1, June 1, and August 1 unless directed otherwise by the Horticultural Consultant.
 2. Fertilize all trees with a combination of PHC for trees 27-9-9 and Mycor Tree Injectable. Mix 8 pounds of PHC for trees and A and B packets of Mycor Tree Injectable per 100 gallons of water. Apply this solution by drenching top or rootball at the rate of five gallons per inch trunk diameter measured at breast height. Keep fertilizer solution agitated during application. Or mix 20 pounds of Injecto-Feed 32-7-7 and 1 gallon of Agri-Plex 0-4-4 in 100 gallons of water, and slowly and uniformly drench top of each root ball with 10 to 15 gallons of the fertilizer solution. Horticultural Consultant will direct which fertilizer to use at each application based on soil tests and vigor of trees.
 3. Irrigate trees on same day of fertilizer application by operating spray heads for 20–30 minutes and 45–60 minutes for rotary heads, unless directed otherwise by the Horticultural Consultant.
 4. Water in short cycles so that run-off does not occur.
- E. Final Fertilization Program: Apply fertilizer as directed in writing by the Architect/Engineer after the Horticultural Consultant determines the fertilization requirements based on soil test data.
- F. General Tree Pruning:

1. Meet requirements of ANSI A300 for Definitions, Pruning Tools and Equipment, Pruning Cuts, and Wound Treatment.
 2. Perform crown cleaning to eliminate weak branches, water sprouts, dead growth, dying growth, diseased growth, and damaged growth.
 3. Perform crown thinning to reduce toppling and wind damage.
 4. Perform crown reduction and shaping to maintain growth within space limitations and maintain a natural appearance, as directed by the Horticultural Consultant in the field.
 5. Retain lower branches in a “tipped back” or pinched condition to promote caliper trunk growth.
 6. Do not cut back to fewer than six buds or leaves on branches.
 7. Prune damaged trees or those that constitute health or safety hazards at any time of year.
- G. Tree Staking:
1. Inspect stakes and ties at least once a week to check for rubbing that causes bark wounds.
 2. Adjust tree stakes and ties as often as required to allow tree caliper growth and prevent bark wounds.
 3. Replace defective materials with materials to match original materials.
- H. Replacement of Plants: Replace, at no additional cost to the Owner, and as soon as weather conditions permit, plants not in a vigorous, thriving condition, during and at the end of the maintenance period.

3.4 SHRUBS AND GROUND COVERS

- A. Watering:
1. Using a soil sampling tube, tensiometer and soil probe, check for moisture penetration throughout the root zone at least twice a week.
 2. Water as frequently as necessary to maintain healthy growth of ground covers.
 3. Adjust frequency and length of time for watering cycles according to changing soil and weather conditions.
- B. Weed Control:
1. Maintain continuous, uniform mulch layer.
 2. Control weeds via manual extraction to the degree practical.
 3. Minimize hoeing of weeds to avoid plant damage.
 4. As a last resort use least toxic herbicides required.
 5. Apply a pre-emerge herbicide Snapshot, Ronstar, Barricade, or Gallery, or a combination of these herbicides in February, May, and September for control of summer and winter weeds.
 6. Spot treat perennial grasses such as bermudagrass and dalisgrass with glyphosate, Fusilade or Acclaim.
 7. Apply Image, Manage, or Sedgehammer for nutgrass control.
 8. Apply Ornamec to control other grasses.
 9. When applying any weed control, follow all label instructions for rates and application instructions. Do not apply against label.
- C. Fertilizer Application:
1. Fertilize ground cover 3 times per year in February, May, and July.

2. Apply dry fertilizers with either a broadcast centrifugal or gravity spreader on planting bed areas.
 3. Uniformly apply 2-1/2 pounds of actual Nitrogen per 1,000 square feet. Apply fertilizers evenly over planting areas by spreading half the fertilizer in one direction and half in a direction 90 degrees to the first direction to assure even application.
 4. Apply dry fertilizers with either a broadcast centrifugal or gravity spreader on planting bed areas.
 5. Water planting areas thoroughly after application. Irrigate plants on the same day of application for 20 to 30 minutes at spray heads and 45 to 60 minutes at rotary heads. Water in short cycles so that run-off does not occur.
- D. Final Fertilization Program: Apply fertilizer as directed in writing by the Architect/Engineer after Horticultural Consultant determines the fertilization requirements based on soil test data.
- E. Replacement of Shrubs and Ground Cover: Replace, at no additional cost to the Owner, and as soon as soil and weather conditions permit, shrub and ground cover plants not in vigorous, thriving condition, during and at the end of the maintenance period.

3.5 LAWN — *Stenotaphrum secundatum* 'Delmar'—'Delmar' St. Augustinegrass

- A. Watering:
1. Using a soil sampling tube, tensiometers and soil probe, check for moisture penetration throughout the root zone at least twice a week.
 2. Water lawns at such frequency as weather conditions require, to replenish soil moisture to 6 inches below root zone.
 3. Provide a total of 1 1/2 inches of water weekly during hot summer weather, in 3 applications per week.
 4. Water at night if irrigation system is electrically controlled. Otherwise, watering shall be done during early mornings.
- B. Weed Control:
1. As a last resort, control broadleaf weeds with least toxic herbicides.
 2. Coordinate application of herbicides with thatch control.
 3. Apply pre-emerge herbicide such as Barricade or Gallery or a combination of these products in February and May for control of summer weeds.
 4. Apply post-emerge herbicides Certainty, Pendulum, Image or Blade for control of grassy and broadleaf weeds.
 5. Apply post-emerge herbicides Lontrel, Speed Zone Southern, Blade or Prompt, for control of broadleaf weeds.
 6. Apply post-emerge herbicides Certainty, Prompt, Image or Manage for control of sedges.
 7. When applying any weed control, follow all label instructions for rates and application instructions. Do not apply against label.
- C. Mowing and Edging:
1. Mow to a height of 2 1/2 inches when it reaches a height of 3 inches.
 2. Trim edges weekly or as needed for neat appearance.
 3. Remove and dispose of grass clippings.

- D. Fertilizer Application:
 - 1. Uniformly apply 18-6-12 at rate of 2 pounds actual nitrogen per 1,000 square feet, 4 times per year in March, May, July, and September.
 - 2. Meet requirements of fertilizer manufacturer's current printed instructions.
 - 3. Apply fertilizers evenly over planting areas by spreading half the fertilizer in one direction and half in a direction 90 degrees to the first direction to assure even application.
 - 4. Apply dry fertilizers with a gravity or a broadcast centrifugal spreader.
 - 5. Apply liquid fertilizers with a metered sprayer.
 - 6. Water planting areas thoroughly after fertilizer application.
 - 7. If turf is chlorotic, treat with a minor element package as directed by Horticultural Consultant for Owner.
 - E. Resodding of Lawn Areas: Replace, at no additional cost to the Owner, and as soon as weather conditions permit, lawn areas not in a vigorous, thriving condition, during and at the end of the maintenance period.
 - F. Aeration:
 - 1. Aerate lawn areas two times during maintenance period, at times of year determined by the Horticultural Consultant.
 - 2. Use a piston-driven type aerifier with 4-inch long by 1/2-inch diameter hollow tines.
 - 3. Moisten soil to 6-inch depth a few days prior to aeration to help achieve full depth penetration with the tines.
 - 4. Remove cores from the lawn surface and dispose of cores.
 - G. Dethatching: Verticut lawn areas to remove excessive thatch to a maximum 1/4-inch below soil surface when directed by Horticultural Consultant in Spring at grass green-up.
- 3.6 LAWN — *Cynodon dactylon* 'Tifway 419'—'Tifway 419' Bermudagrass
- A. Watering:
 - 1. Using a soil sampling tube, tensiometers and soil probe, check for moisture penetration throughout the root zone at least twice a week.
 - 2. Water lawns at such frequency as weather conditions require, to replenish soil moisture to 6 inches below root zone.
 - 3. Provide a total of 1 1/2 inches of water weekly during hot summer weather, in 3 applications per week.
 - 4. Water at night if irrigation system is electrically controlled. Otherwise, watering shall be done during early mornings.
 - B. Weed Control:
 - 1. As a last resort, control broadleaf weeds with least toxic herbicides.
 - 2. Coordinate application of herbicides with thatch control.
 - 3. Apply pre-emerge herbicide such as Barricade or Gallery or a combination of these products in February and May for control of summer weeds.
 - 4. Apply post-emerge herbicides Pendulum, Certainty, Blade, Monument or Drive for control of grassy and broadleaf weeds.
 - 5. Apply post-emerge herbicide Confront, Speed Zone Southern, or Lontrel for control of broadleaf weeds.

6. Apply post-emerge herbicide Image, Manage, Certainty, Sedgehammer or Monument for control of sedges.
 7. When applying any weed control, follow all label instructions for rates and application instructions. Do not apply against label.
- C. Mowing and Edging:
1. Mow using a reel mower to a height of 1 inch when it reaches a height of 1-1/4 inches.
 2. Trim edges weekly or as needed for neat appearance.
 3. Remove and dispose of grass clippings.
- D. Fertilizer Application:
1. Uniformly apply 18-6-12 at rate of 2 pounds actual nitrogen per 1,000 square feet, 4 times per year in March, May, July, and September.
 2. Meet requirements of fertilizer manufacturer's current printed instructions.
 3. Apply fertilizers evenly over planting areas by spreading half the fertilizer in one direction and half in a direction 90 degrees to the first direction to assure even application.
 4. Apply dry fertilizers with a gravity or a broadcast centrifugal spreader.
 5. Apply liquid fertilizers with a metered sprayer.
 6. Water planting areas thoroughly after fertilizer application.
 7. If turf is chlorotic, treat with a minor element package as directed by Horticultural Consultant for Owner.
- E. Resodding of Lawn Areas: Replace, at no additional cost to the Owner, and as soon as weather conditions permit, lawn areas not in a vigorous, thriving condition, during and at the end of the maintenance period.
- F. Aeration:
1. Aerate lawn areas two times during maintenance period, at times of year determined by the Horticultural Consultant.
 2. Use a piston-driven type aerifier with 4-inch long by 1/2-inch diameter hollow tines.
 3. Moisten soil to 6-inch depth a few days prior to aeration to help achieve full depth penetration with the tines.
 4. Remove cores from the lawn surface and dispose of cores.
- G. Dethatching: Verticut lawn areas to remove excessive thatch to a maximum 1/4-inch below soil surface when directed by Horticultural Consultant in Spring at grass green-up.
- 3.7 LAWN: *Cynodon dactylon* 'Blackjack': 'Blackjack' Bermudagrass
- A. Watering:
1. Using a soil sampling tube, tensiometers and soil probe, check for moisture penetration throughout the root zone at least twice a week.
 2. Water lawns at such frequency as weather conditions require, to replenish soil moisture to 6 inches below root zone.
 3. Provide a total of 1-1/2 inches of water weekly during hot summer weather, in 3 applications per week.
 4. Water at night if irrigation system is electrically controlled. Otherwise, watering shall be done during early mornings.

- B. Weed Control:
 - 1. As a last resort, control broadleaf weeds with least toxic herbicides.
 - 2. Coordinate application of herbicides with thatch control.
 - 3. Apply pre-emerge herbicide such as Barricade or Gallery or a combination of these products in February and May for control of summer weeds.
 - 4. Apply post-emerge herbicides Pendulum, Certainty, Blade, Monument or Drive for control of grassy and broadleaf weeds.
 - 5. Apply post-emerge herbicide Confront, Speed Zone Southern, or Lontrel for control of broadleaf weeds.
 - 6. Apply post-emerge herbicide Image, Manage, Certainty, Sedgehammer or Monument for control of sedges.
 - 7. When applying any weed control, follow all label instructions for rates and application instructions. Do not apply against label.
- C. Mowing and Edging:
 - 1. Mow to a height of 2 inches when it reaches a height of 2-1/2 inches.
 - 2. Trim edges weekly or as needed for neat appearance.
 - 3. Remove and dispose of grass clippings.
- D. Fertilizer Application:
 - 1. Uniformly apply 18-6-12 at rate of 2 pounds actual nitrogen per 1,000 square feet, 4 times per year in March, May, July, and September.
 - 2. Meet requirements of fertilizer manufacturer's current printed instructions.
 - 3. Apply fertilizers evenly over planting areas by spreading half the fertilizer in one direction and half in a direction 90 degrees to the first direction to assure even application.
 - 4. Apply dry fertilizers with a gravity or a broadcast centrifugal spreader.
 - 5. Apply liquid fertilizers with a metered sprayer.
 - 6. Water planting areas thoroughly after fertilizer application.
 - 7. If turf is chlorotic, treat with a minor element package as directed by Horticultural Consultant for Owner.
- E. Resodding of Lawn Areas: Replace, at no additional cost to the Owner, and as soon as weather conditions permit, lawn areas not in a vigorous, thriving condition, during and at the end of the maintenance period.
- F. Aeration:
 - 1. Aerate lawn areas two times during maintenance period, at times of year determined by the Horticultural Consultant.
 - 2. Use a piston-driven type aerifier with 4-inch long by 1/2-inch diameter hollow tines.
 - 3. Moisten soil to 6-inch depth a few days prior to aeration to help achieve full depth penetration with the tines.
 - 4. Remove cores from the lawn surface and dispose of cores.
- G. Dethatching: Verticut lawn areas to remove excessive thatch to a maximum 1/4-inch below soil surface when directed by Horticultural Consultant in Spring at grass green-up.

3.8 WILDFLOWER MEADOW

- A. Watering:
 - 1. Using a soil sampling tube, tensiometers and soil probe, check for moisture penetration throughout the root zone at least twice a week.
 - 2. Water meadow areas at such frequency as weather conditions require, to replenish soil moisture to 6 inches below root zone.
 - 3. Provide a total of 1 inch of water weekly during hot summer weather, in 3 applications per week.
 - 4. Water at night if irrigation system is electrically controlled, otherwise, water during early mornings.
- B. Weed Control:
 - 1. As a last resort, control broadleaf weeds with least toxic herbicides.
 - 2. Apply post-emerge herbicide Journey or Ornamec for control of grassy and broadleaf weeds.
 - 3. Coordinate application of herbicides with thatch control and reseeding schedule.
 - 4. Do not apply herbicide unless directed by the Horticultural Consultant.
 - 5. When applying any weed control, follow all label instructions for rates and application instructions. Do not apply against label.
- C. Mowing and Edging:
 - 1. Mow entire surface of meadow areas 2 times per year to a height of 6 inches only when directed by the Horticultural Consultant, which will be once in June or July, after spring flowers have bloomed and begin to shatter, and once again in November, after summer and fall flowers have bloomed and begin to shatter.
 - 2. In addition to mowing the entire surface of the meadow areas 2 times, mow a swath 3 feet wide along paving edges at a 4-inch height twice during the summer, to neaten meadow edges, when directed by the Horticultural Consultant.
 - 3. Trim edges along paving with the lawn edger 21 times per year when required for neat appearance.
 - 4. Allow grass clippings to remain on ground for re-seeding purposes.
- D. Fertilizer Application:
 - 1. Uniformly apply 18-6-12 at the rate of 2 pounds of actual nitrogen per 1,000 per square feet one time per year in September.
 - 2. Meet requirements of fertilizer manufacturer's current printed instructions.
 - 3. Apply fertilizers evenly over planting areas by spreading half the fertilizer in one direction and half in a direction 90 degrees to the first direction to assure even application.
 - 4. Apply dry fertilizers with a gravity or a broadcast centrifugal spreader.
 - 5. Apply liquid fertilizers with a metered sprayer.
 - 6. Water planting areas thoroughly after fertilizer application.
- E. Reseeding of Meadow Areas: Replace, at no additional cost to the Owner, and as soon as weather conditions permit, seed meadow areas not in a vigorous, thriving condition, during and at the end of the maintenance period, except at areas affected by too much shade.

3.9 INSECTS, PESTS, AND DISEASE CONTROL

- A. General:

1. Employ principles of IPM in the selection of preventative and control measures for plant pests and diseases.
 2. Insignificant pests will be tolerated providing they do not seriously threaten planting health and appearance unless directed otherwise by the Horticultural Consultant.
 3. Monitor the site closely and take timely action to address problems identified.
 4. Use personnel licensed and experienced using materials approved by the EPA and conform to applicable laws, codes and regulations, under the direction of a licensed certified pest control operator.
 5. When necessary apply the least toxic chemical required for the existing problem, unless directed otherwise by the Horticultural Consultant.
 6. Apply sprays only if a pest or disease is a serious threat and cease application after problem is under control, unless directed otherwise by the Horticultural Consultant.
 7. Spray with extreme care to avoid hazards to any person, pet, or automobile in the area or adjacent areas.
 8. Meet requirements of chemical manufacturer's current printed label and application instructions.
 9. The Contractor shall be held liable for plant damage due to the use of chemicals.
- B. Plant Condition Inspection:
1. Inspect plant material daily for damage and signs of stress, pests, and disease.
 2. Submit a written and photographic inspection report of observed damage, and signs of stress, pests, or disease via e-mail to the Owner, the Architect/Engineer, and Horticultural Consultant within 2 days of observations.
 3. Use a digital camera with at least 5.0 megapixels of resolution to document observations.
- C. Spraying:
1. When necessary apply the least toxic chemical required for the existing problem.
 2. Meet requirements of manufacturer's current printed instructions.
 3. Apply sprays only if a pest or disease is a serious threat and cease application after problem is under control.
 4. Make spray applications in early morning hours, prior to 7:00 a.m., unless approved otherwise by Owner and Horticultural Consultant.
- D. Treating *Acer saccharum*: Caddo Maple with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 3. Lace Bugs: Treat when present with merit, tempo or marathon.
 4. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 5. Thrips: Treat when present with merit, avid, talstar or marathon.
 6. Whitefly: Treat when present with merit, talstar, triact, avid or marathon.
- E. Treating *Agave Parryi var. truncata*: Parry's Agave with Insecticides:
1. Thrips: Treat when present with merit, talstar, avid or marathon.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.

- F. Treating *Callicarpa americana*: American beautyberry with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 3. Lace Bugs: Treat when present with merit, tempo or marathon.
 4. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 5. Thrips: Treat when present with merit, avid, talstar or marathon.
 6. Whitefly: Treat when present with merit, talstar, triact, avid or marathon.
- G. Treating *Carya illinoensis*: Pecan with Insecticides:
1. Aphids: Treat with talstar or marathon when present.
 2. Scale: Treat when present with horticultural oil or a combination of talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 3. Caterpillar: Treat with talstar or bacillus thuringiensis when present.
 4. Galls: Treat as leaves first start to come out in the early spring with horticultural oil or with a combination spray of horticultural oil and talstar or marathon.
- H. Treating *Cercis Canadensis var. Tenensis*: Texas Redbud with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 3. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 4. Leaf Rollers: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 5. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
- I. Treating *Cornus drummondii*: Roughleaf Dogwood with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 3. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 4. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
- J. Treating *Diospyros texana*: Texas Persimmon with Insecticides: Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
- K. Treating *Euonymus fortunei 'Colorata'*: Colorata Euonymus with Insecticides:
1. Scale: Treat when present with horticultural oil or a combination of merit, talstar, triact or marathon and oil. Follow the temperature restrictions for use of oil.
 2. Aphids: Treat with merit, mavrik, tempo, talstar, triact, avid or marathon when present.
 3. Caterpillar: Treat when present with merit, tempo, talstar, mavrik or bacillus thuringiensis.
 4. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.

5. Lace Bugs: Treat when present with merit, tempo or marathon.
 6. Leaf Miners: Treat when present with merit, talstar, marathon, avid or tempo.
 7. Thrips: Treat when present with merit, talstar, avid or marathon.
 8. Whitefly: Treat when present with merit, talstar, triact, avid or marathon.
- L. Treating *Hesperaloe parviflora*: Red Yucca with Insecticides:
1. Aphids: Treat with merit, mavrik, tempo, talstar, triact, avid or marathon when present.
 2. Beetles: Treat with merit, marathon, mavrik or tempo when present usually in May, June or July.
 3. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 4. Leaf Miners: Treat when present with merit, talstar, marathon, avid or tempo.
 5. Scale: Treat when present with horticultural oil or a combination of merit, talstar, triact or marathon and oil. Follow the temperature restrictions for use of oil.
 6. Thrips: Treat when present with merit, talstar, avid or marathon.
- M. Treating *Ilex decidua*: Possumhaw Holly with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 3. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 4. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 5. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
- N. Treating *Ilex x 'Nellie R. Stevens'*: Nellie R. Stevens Holly with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 3. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 4. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 5. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
- O. Treating *Ilex vomitoria* 'Pride of Houston': Pride of Houston Holly with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 3. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 4. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 5. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
- P. Treating *Magnolia grandiflora* 'Claudia Wannamaker': Claudia Wannamaker Magnolia with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.

3. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 4. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
- Q. Treating *Magnolia grandiflora* 'Little Gem': Little Gem Magnolia with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 3. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 4. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
- R. Treating *Parthenocissus quinquefolia*: Virginia Creeper with Insecticides:
1. Aphids: Treat with merit, mavrik, tempo, talstar, triact, avid or marathon when present.
 2. Beetles: Treat with merit, marathon, mavrik or tempo when present usually in May, June or July.
 3. Caterpillar: Treat when present with merit, tempo, talstar, mavrik or bacillus thuringiensis.
 4. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 5. Lace Bugs: Treat when present with merit, tempo or marathon.
 6. Leaf Miners: Treat when present with merit, talstar, marathon, avid or temp
 7. Leaf Rollers: Treat when present with merit, tempo, talstar, mavrik or bacillus thuringiensis.
 8. Mealy Bugs: Treat when present with horticultural oil or a combination of merit, talstar, triact or marathon and oil. Follow the temperature restrictions for use of oil.
 9. Scale: Treat when present with horticultural oil or a combination of merit, talstar, triact or marathon and oil. Follow the temperature restrictions for use of oil.
 10. Thrips: Treat when present with merit, talstar, avid or marathon.
 11. Whitefly: Treat when present with merit, talstar, triact, avid or marathon.
- S. Treating *Pinus eldarica*: Afghan Pine with Insecticides:
1. Aphids: Treat with merit, mavrik, tempo, talstar, triact or marathon when present.
 2. Lace Bugs: Treat when present with merit, tempo or marathon.
 3. Pine Tip Beetle: Treat when present with merit or tempo.
 4. Pine Bark Beetle: Treat when present with merit or tempo.
 5. Psyllids: Treat when present with marathon, merit or mavrik.
 6. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 7. Thrips: Treat when present with merit, avid, talstar or marathon.
 8. Pine Twig Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 9. Pine Tip Moth: Treat when present with merit, talstar or marathon.
- T. Treating *Prunus mexicana*: Mexican Plum with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.

3. Lace Bugs: Treat when present with merit, tempo or marathon.
4. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
5. Thrips: Treat when present with merit, avid, talstar or marathon.
6. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
7. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.

U. Treating *Quercus chinquapin*: Chinquapin Oak with Insecticides:

1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
2. Bagworms: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
3. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
4. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
5. Galls: Treat as leaves first start to come out in the early spring with horticultural oil or with a combination spray of horticultural oil and merit, talstar or marathon.
6. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
7. Lace Bugs: Treat when present with merit, tempo or marathon.
8. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
9. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
10. Thrips: Treat when present with merit, avid, talstar or marathon.
11. Twig Girdlers: Treat when present with merit, talstar or tempo.

V. Treating *Quercus laceyi*: Lacey Oak with Insecticides:

1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
2. Bagworms: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
3. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
4. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
5. Galls: Treat as leaves first start to come out in the early spring with horticultural oil or with a combination spray of horticultural oil and merit, talstar or marathon.
6. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
7. Lace Bugs: Treat when present with merit, tempo or marathon.
8. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
9. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
10. Thrips: Treat when present with merit, avid, talstar or marathon.
11. Twig Girdlers: Treat when present with merit, talstar or tempo.

W. Treating *Quercus macrocarpa*: Bur Oak with Insecticides:

1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
2. Bagworms: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.

3. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 4. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 5. Galls: Treat as leaves first start to come out in the early spring with horticultural oil or with a combination spray of horticultural oil and merit, talstar or marathon.
 6. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 7. Lace Bugs: Treat when present with merit, tempo or marathon.
 8. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 9. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 10. Thrips: Treat when present with merit, avid, talstar or marathon.
 11. Twig Girdlers: Treat when present with merit, talstar or tempo.
 12. Leaf Skeletonizer: Treat when present with talstar, merit, tempo or mavrik.
- X. Treating *Quercus shumardii*: Shumard Red Oak with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Bagworms: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 3. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 4. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 5. Galls: Treat as leaves first start to come out in the early spring with horticultural oil or with a combination spray of horticultural oil and merit, talstar or marathon.
 6. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 7. Lace Bugs: Treat when present with merit, tempo or marathon.
 8. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 9. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 10. Thrips: Treat when present with merit, avid, talstar or marathon.
 11. Twig Girdlers: Treat when present with merit, talstar or tempo.
 12. Leaf Skeletonizer: Treat when present with talstar, merit, tempo or mavrik.
- Y. Treating *Quercus texana*— Texas Red Oak with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Bagworms: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 3. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 4. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 5. Galls: Treat as leaves first start to come out in the early spring with horticultural oil or with a combination spray of horticultural oil and merit, talstar or marathon.
 6. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
 7. Lace Bugs: Treat when present with merit, tempo or marathon.
 8. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 9. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.

10. Thrips: Treat when present with merit, avid, talstar or marathon.
 11. Twig Girdlers: Treat when present with merit, talstar or tempo.
 12. Leaf Skeletonizer: Treat when present with talstar, merit, tempo or mavrik.
- Z. Treating *Rhus lanceolata*: Prairieleaf Sumac with Insecticides: Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
- AA. Treating *Sophora affinis*: Eve's Necklace with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 3. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 4. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 5. Thrips: Treat when present with merit, avid, talstar or marathon.
- BB. Treating *Taxodium ascendens*: Pond Cypress with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Bagworms: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 3. Thrips: Treat when present with merit, avid, talstar or marathon.
- CC. Treating *Ulmus crassifolia*: Cedar Elm with Insecticides:
1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 3. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 4. Lace Bugs: Treat when present with merit, tempo or marathon.
 5. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
 6. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 7. Thrips: Treat when present with merit, avid, talstar or marathon.
- DD. Treating *Unquadia speciosa*: Mexican Buckeye with Insecticides:
1. Aphids: Treat with merit, mavrik, triact, tempo, talstar or marathon when present.
 2. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
 3. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
 4. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
 5. Thrips: Treat when present with merit, avid, talstar or marathon.
 6. Beetles: Treat with merit, marathon, mavrik or tempo when present usually in May, June or July.
- EE. Treating *Wisteria floribunda* - Wisteria with Insecticides:
1. Aphids: Treat with merit, mavrik, tempo, talstar, triact, avid or marathon when present.

2. Beetles: Treat with merit, marathon, mavrik or tempo when present usually in May, June or July.
3. Caterpillar: Treat when present with merit, tempo, talstar, mavrik or bacillus thuringiensis.
4. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
5. Leaf Miners: Treat when present with merit, talstar, marathon, avid or tempo.
6. Leaf Rollers: Treat when present with merit, tempo, talstar, mavrik or bacillus thuringiensis.
7. Mealy Bugs: Treat when present with horticultural oil or a combination of merit, talstar, triact or marathon and oil. Follow the temperature restrictions for use of oil.
8. Scale: Treat when present with horticultural oil or a combination of merit, talstar, triact or marathon and oil. Follow the temperature restrictions for use of oil.
9. Thrips: Treat when present with merit, talstar, avid or marathon.
10. Whitefly: Treat when present with merit, talstar, triact, avid or marathon.

FF. Treating Existing Trees with Insecticides:

1. Aphids: Treat with merit, triact, mavrik, tempo, talstar or marathon when present.
2. Bagworms: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
3. Borers: Treat when borers are present. Spray the trunks and upper branches with merit, talstar or marathon. Open wounds are easily susceptible to borer attack.
4. Caterpillar: Treat with merit, tempo, talstar, mavrik or bacillus thuringiensis when present.
5. Galls: Treat as leaves first start to come out in the early spring with horticultural oil or with a combination spray of horticultural oil and merit, talstar or marathon.
6. Grasshoppers: Treat when present with merit, talstar, tempo or marathon.
7. Lace Bugs: Treat when present with merit, tempo or marathon.
8. Leaf Miners: Treat when present with merit, talstar, avid, marathon or tempo.
9. Scale: Treat when present with horticultural oil or a combination of merit, triact, talstar or marathon and oil. Follow the temperature restrictions for use of oil.
10. Thrips: Treat when present with merit, avid, talstar or marathon.
11. Twig Girdlers: Treat when present with merit, talstar or tempo.
12. Leaf Skeletonizer: Treat when present with talstar, merit, tempo or mavrik.

GG. Treating *Stenotaphrum secundatum* 'Delmar': 'Delmar' St. Augustinegrass with Insecticides:

1. Grubworms: Treat with oftanol, merit, Mach II or triumph granules in mid-July through mid-October if there are more than 4 grubworms per square foot present. Check first in July and continue checking through mid-October. After application of granular chemical, operate the irrigation system for 20-30 minutes for spray heads and 45-60 minutes for oscillating heads to insure control.
2. Sod Webworms: Treat when present between June and September with merit or bacillus thuringiensis.
3. Chinchbugs: Treat when present between July and August with merit.
4. Armyworms: Treat when present between May and September with merit or tempo.
5. Fire Ants: Broadcast spread fipronil, award or logic and spot treat with orthene granules when present.

HH. Treating *Cynodon dactylon* 'Tifway 419': 'Tifway 419' Bermudagrass with Insecticides:

1. Grubworms: Treat with oftanol, merit, Mach II or triumph granules in mid-July through mid-October if there are more than 4 grubworms per square foot present. Check first in July and continue checking through mid-October. After application of granular chemical, operate the irrigation system for 20-30 minutes for spray heads and 45-60 minutes for oscillating heads to insure control.
 2. Sod Webworms: Treat when present between June and September with merit or bacillus thuringiensis.
 3. Armyworms: Treat when present between May and September with Bacillus thuringiensis, tempo or mavrik.
 4. Fire Ants: Broadcast spread fipronil, award or logic and spot treat with orthene granules when present.
- II. Treating *Cynodon dactylon* 'Blackjack': 'Blackjack' Bermudagrass with Insecticides:
1. Grubworms: Treat with oftanol, merit, Mach II or triumph granules in mid-July through mid-October if there are more than 4 grubworms per square foot present. Check first in July and continue checking through mid-October. After application of granular chemical, operate the irrigation system for 20-30 minutes for spray heads and 45-60 minutes for oscillating heads to insure control.
 2. Sod Webworms: Treat when present between June and September with merit or bacillus thuringiensis.
 3. Armyworms: Treat when present between May and September with Bacillus thuringiensis, tempo or mavrik.
 4. Fire Ants: Broadcast spread fipronil, award or logic and spot treat with orthene granules when present.
- JJ. Treating Wildflower Meadow Areas with Insecticides: Use IPM approach and spray only when thresholds could cause damage and as directed by Horticultural Consultant.
- KK. Treatment for Fire Ants: Broadcast spread Fipronil, Logic, or Award and spot treat with Orthene granules when present.
- LL. Preventative Treatment for Insects and Mites: Spray trees, shrubs, and ground cover once during winter months with an application of dormant oil in combination with Talstar, making sure to thoroughly cover trunks, branches, and leaves, including the underside of leaves.
- MM. Treating *Acer saccharum*: Caddo Maple with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
 3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 4. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 5. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
 6. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
 7. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.

8. Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.
 9. Verticillium Wilt: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
- NN. Treating *Agave Parryi* var. *truncata*: Parry's Agave with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
 3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 4. Leaf Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 5. Petal Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
- OO. Treating *Callicarpa americana*: Americanbeautyberry with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
- PP. Treating *Carya illinoensis*: Pecan with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
 3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
 5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
 7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
 8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
 9. Bacterial Canker: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 10. Scab: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
- QQ. Treating *Cercis canadensis* var. *Tenensis*: Texas Redbud with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.

2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
 3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
 5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 6. Wilt: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
- RR. Treating *Cornus drummondii*: Roughleaf Dogwood with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 3. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
 4. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 5. Petal Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 6. Wilt: Treat when present with medallion, clearys 3336, OHP 6672, sextant
 7. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
- SS. Treating *Diospyros texana*: Texas Persimmon with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 3. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
 4. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 5. Petal Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 6. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
 7. Wilt: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
- TT. Treating *Euonymus fortunei* 'Colorata': Colorata Euonymus with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 3. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.

- UU. Treating *Hesperaloe parviflora*: Red Yucca with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45 or durosan.
 3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 4. Leaf Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 5. Petal Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
- VV. Treating *Ilex decidua*: Possumhaw Holly with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
 3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
 5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
 7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
 8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
 9. Sooty Mold: The only damage caused by this fungus is through shading. It grows on honeydew excretions made by insects so control all insects.
- WW. Treating *Ilex x 'Nellie R. Stevens'*: Nellie R. Stevens Holly with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
 3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
 5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
 7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
 8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
 9. Sooty Mold: The only damage caused by this fungus is through shading. It grows on honeydew excretions made by insects so control all insects.

- XX. Treating *Ilex vomitoria* 'Pride of Houston': Pride of Houston Holly with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
 3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
 5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
 6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
 7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
 8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
 9. Sooty Mold: The only damage caused by this fungus is through shading. It grows on honeydew excretions made by insects so control all insects.
- YY. Treating *Magnolia grandiflora* 'Claudia Wannamaker': Claudia Wannamaker Magnolia with Fungicides:
1. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 2. Verticillium Wilt: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
 3. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
- ZZ. Treating *Magnolia grandiflora* 'Little Gem': Little Gem Magnolia with Fungicides:
1. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 2. Verticillium Wilt: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
 3. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
- AAA. Treating *Parthenocissus quinquefolia*: Virginia Creeper with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
 2. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
 3. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
- BBB. Treating *Pinus eldarica*: Afghan Pine with Fungicides:
1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.

2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
4. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
5. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
6. Needle Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
7. Sooty Mold: The only damage caused by this fungus is through shading. It grows on honeydew excretions made by insects so control all insects.
8. Needlecast: Secondary disease on needles that attacks as needles are naturally falling. No control needed.

CCC. Treating *Prunus mexicana*: Mexican Plum with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Petal Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.

DDD. Treating *Quercus chinquapin*: Chinquapin Oak with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
9. Oak Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.
10. Oak Wilt: Inject alamo into the root flares to prevent and control oak wilt.
11. Hypoxylon Canker: Chemical treatments would not be effective because the fungus is located within the tree.

EEE. Treating *Quercus laceyi*: Lacey Oak with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
9. Oak Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.
10. Oak Wilt: Inject alamo into the root flares to prevent and control oak wilt.
11. Hypoxylon Canker: Chemical treatments would not be effective because the fungus is located within the tree.

FFF. Treating *Quercus macrocarpa*: Bur Oak with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
9. Oak Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.
10. Oak Wilt: Inject alamo into the root flares to prevent and control oak wilt.
11. Hypoxylon Canker: Chemical treatments would not be effective because the fungus is located within the tree.

GGG. Treating *Quercus shumardii*: Shumard Red Oak with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.

3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
9. Oak Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.
10. Oak Wilt: Inject alamo into the root flares to prevent and control oak wilt.
11. Hypoxylon Canker: Chemical treatments would not be effective because the fungus is located within the tree.

HHH. Treating *Quercus texana*— Texas Red Oak with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
9. Oak Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.
10. Oak Wilt: Inject alamo into the root flares to prevent and control oak wilt.
11. Hypoxylon Canker: Chemical treatments would not be effective because the fungus is located within the tree.

III. Treating *Rhus lanceolata*: Prairieleaf Sumac with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.

5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
7. Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.

JJJ. Treating *Sophora affinis*: Eve's Necklace with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
5. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
6. Fusarium : Treat when present with medallion, clearys 3336, OHP 6672, sextant.

KKK. Treating *Taxodium asscendens*: Pond Cypress with Fungicides: Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.

LLL. Treating *Ulmus crassifolia*: Cedar Elm with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
5. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
6. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
7. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
8. Elm Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.
9. Dutch Elm Tree: Arbotect is the approved treatment.
10. Bleeding Canker, Wetwood or Slime Flux: There is no control for this disease with the exception of tapping into infected areas to relieve pressure.

MMM. Treating *Ungnadia speciosa*: Mexican Buckeye with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.

3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Wilt: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
7. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.

NNN. Treating *Wisteria floribunda*: Wisteria with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.

OOO. Treating Existing Trees with Fungicides:

1. Powdery Mildew: Treat when present with clearys 3336, heritage, OHP 6672, compass, triact 70, banner, funginex, bayleton or rubigan.
2. Rust: Treat when present with heritage, banner, clearys 3336, OHP 6672, triact 70, bayleton, manzate 200 or dithane M-45.
3. Leaf Spot: Treat when present between May and September with medallion, heritage, banner, clearys 3336, OHP 6672, compass, triact 70, sextant, daconil 2787, manzate 200, dithane M-45 or durosan.
4. Botrytis: Treat when present with medallion, clearys 3336, OHP 6672, compass, triact 70, sextant.
5. Twig Blight: Treat when present with medallion, clearys 3336, OHP 6672, triact 70, sextant.
6. Rhizoctonia: Treat when present with medallion, clearys 3336, OHP 6672, compass, sextant.
7. Fusarium: Treat when present with medallion, clearys 3336, OHP 6672, sextant.
8. Anthracnose: Treat when present with clearys 3336, OHP 6672, compass, triact 70.
9. Oak Leaf Blister: Treat with bordeaux mixture when leaves are appearing in the early spring if there was a problem with this disease the previous year.
10. Oak Wilt: Inject alamo into the root flares to prevent and control oak wilt.
11. Hypoxylon Canker: Chemical treatments would not be effective because the fungus is located within the tree.

PPP. Treating *Stenotaphrum secundatum* 'Delmar': 'Delmar' St. Augustinegrass with Fungicides:

1. Brown Patch: Control in late spring and early fall when present with heritage, terraclor, fore, banner or daconil.
2. Gray Leaf Spot: Treat when present in summer months with heritage, daconil, banner or fore.
3. St. Augustinegrass Decline: No control. Remove and replace with Raleigh St. Augustine, a disease resistant variety.
4. Take-All Patch: Treat in the fall with heritage or rubigan when present.

QQQ. Treating *Cynodon dactylon* 'Tifway 419': 'Tifway 419' Bermudagrass with Insecticides:

1. Pythium Blight: Treat when present during warm, wet weather with agri-fos, heritage, fore or banner.
 2. Rust: Treat when present between July and August with quali-pro, heritage, fore or banner.
 3. Helminthosporium: Treat during the summer months with heritage, banner, fore or daconil when disease is present.
 4. Take-All Patch: Treat in the fall with quali-pro, heritage or rubigan when present.
- RRR. Treating Meadow Areas with Fungicides: Use IPM approach and spray only when thresholds could cause damage.
- SSS. Mite Control: Treat trees and shrubs, when mites are present, from March through October with Miticidal soap, Talstar, Dicofol, Vendex, Pentac, Mavrik, or Avid.
- TTT. Root Disease Control: Treat root diseases on trees and shrubs with Captan, Banrot, Aliette, or Subdue 2E as recommended by the Horticultural Consultant.
- UUU. Preliminary Chemical Application Schedule to Establish Bid Price: See Preliminary Chemical Application Schedule under Article 3.13 in this Section.
- VVV. Final Chemical Application Schedule: As directed by the Horticultural Consultant in writing.

3.10 IRRIGATION SYSTEM

- A. Damages:
1. Monitor irrigation system daily for damage.
 2. Repair at no additional cost to the Owner damages to system caused by Contractor's operations.
 3. Perform repairs before next irrigation cycle commences.
- B. Cleaning and Monitoring the System:
1. Continually monitor (daily, including weekends and holidays) the irrigation systems to verify that they are functioning properly as designed.
 2. Clean filters and strainers at least once a month and as often as necessary to keep the irrigation systems free of sand and other debris.
 3. Set and continuously adjust and program automatic controller for seasonal water requirement.
 4. Make program adjustments as required by changing field conditions.
 5. At least once a week, daily when required, use a soil sampling tube, tensiometers and soil probe to check the rootball moisture of representative plants as well as the surrounding soil.
 6. Prevent or minimize spraying on paving, windows, building walls, and other structures, by balancing the throttle control on the remote control valves and the adjustment screws on the sprinkler heads.
 7. Do not allow water to atomize and drift.
 8. Record in writing the daily watering times set for each remote control valve and submit log of times to Owner's Designated Representative, Architect/Engineer, and Horticultural Consultant bi-monthly for record purposes.

- C. Winter Months: During periods of freezing temperatures, make sure irrigation system is turned off drain and restart system as soon as temperatures go above freezing.

3.11 WOOD CHIP MULCH AREAS

- A. Surface Smoothness: Smooth out finished surfaces of mulch twice monthly.
- B. Weed Control:
 - 1. Maintain areas weed-free.
 - 2. As a last resort, control weeds with least toxic chemicals.
- C. Mulch Replenishment: During the last month of the maintenance period, add mulch to settled areas to bring finished surfaces back to the levels indicated on the Drawings.

3.12 FIELD QUALITY CONTROL

- A. Soil Testing to Determine Fertilization Requirements:
 - 1. When directed by the Horticultural Consultant, take up to 10 composite soil samples from locations determined by the Horticultural Consultant in the field.
 - 2. Send samples to same laboratory used for soil testing required by Section 02910.
 - 3. Employ the laboratory to test for the following:
 - 4. pH measurement in the saturation extract per USDA Handbook No. 60, Method 21.
 - 5. Electrical conductivity of the saturation extract per USDA Handbook No. 60, Method 2.
 - 6. Sodium absorption ratio of the saturation extract per USDA Handbook No. 60, Method 20b.
 - 7. Determination of boron, calcium, copper, iron, magnesium, manganese, molybdenum, phosphorous, potassium, sodium, sulfur, and zinc, via the following test methods: Mehlich Number 3, Bray P1, Bray P2, Olsen P, DTPA, ammonium acetate, ammonium bicarbonate DTPA, and hot water extract from boron.
 - 8. Analysis of saturation extract for calcium, magnesium, sodium, boron, chloride, phosphorous, nitrate, and sulfate.
 - 9. Measurement of following trace metals by the DTPA extract: aluminum, arsenic, cadmium, chromium, cobalt, lead, lithium, nickel, selenium, silver, strontium, tin, and vanadium.
 - 10. Presence of calcium carbonate and magnesium carbonate.
 - 11. Estimate of soil texture per commonly used methods.
 - 12. Estimate of organic matter content per commonly used methods.
 - 13. Exchangeable Ammonium Cation.
 - 14. Base Saturation.
 - 15. Cation Exchange Capacity.
 - 16. Carbonates Determination.
 - 17. Soil Bulk Density.
 - 18. Water Infiltration Rate per USDA Handbook No. 60, Method 34b.
 - 19. At least 30 days prior to commencement of soil preparation Work, submit to the Architect/Engineer and Horticultural Consultant the laboratory's written soil test report including the laboratory's soil test data; the laboratory's interpretation of nutritional deficiencies, excesses, and potential toxicities; and the laboratory's amendment recommendations.

20. The Horticultural Consultant will determine the fertilization programs based on the soil test report which may differ from the soil test report amendment recommendations.

B. Maintenance Review for ~~One~~ **Three-Year Maintenance Period** and for a ~~Two-Year Period~~ Following the ~~One-Year Maintenance Period~~ **the date of Final Completion:**

1. Horticultural Consultant will review Work and ~~provide~~ **prepare** a written report for each site inspection **and will submit the report within 24 hours via e-mail to the Contractor for immediate action to reverse problems.**
2. Horticultural Consultant will inspect site 48 times per year.
3. Horticultural consultant inspection reports: ~~Plant inspection report documenting~~ **will include, but not be limited to written and photographic documentation** of damage and signs of stress due to pests, ~~and~~ disease, nutritional deficiencies, watering ~~or~~ **and** any other problem ~~submitted via e-mail to the Contractor for immediate action within 24 hours to reverse problems.~~
4. Contractor Verification Report: Contractor ~~will~~ **shall** document and verify corrective actions to Architect/Engineer and Horticultural Consultant via 3-mail within 24 hours following action.

C. Maintenance Review at End of ~~One~~ **Three-Year Maintenance Period:**

1. At the end of the ~~one~~ **three-year** maintenance period, request the Architect/Engineer and Horticultural Consultant to review Work.
2. Submit a written request at least five working days prior to the anticipated date of review.
3. If the Architect/Engineer and Horticultural Consultant observe Work that fails to meet the Contract Document requirements the Contractor will receive written notification from the Owner's Designated Representative of corrective Work preventing Owner acceptance of the maintenance Work.
4. Perform corrective Work within 10 calendar days after the review.
5. Upon completion of the corrective Work, request the Architect/Engineer and Horticultural Consultant to review the Work.
6. Corrective Work followed by Architect/Engineer and Horticultural Consultant's review will be required until the Architect/Engineer and Horticultural Consultant no longer observes Work not meeting the Contract Document requirements.

D. Owner's Acceptance of Maintenance Responsibility:

1. When it appears to the Architect/Engineer and Horticultural Consultant that the maintenance Work conforms to the requirements of the Contract Documents the Contractor will receive written notification designating the day which the Owner will accept maintenance responsibility.
2. Continue maintenance of landscape Work until the date that the Owner accepts maintenance responsibility.

3.13 SCHEDULES

A. Preliminary Chemical Application Schedule to Establish a Bid Price:

	<i>Applications per Year per Plant after Installation</i>
<i>Chemical Type</i>	<i>-----</i>

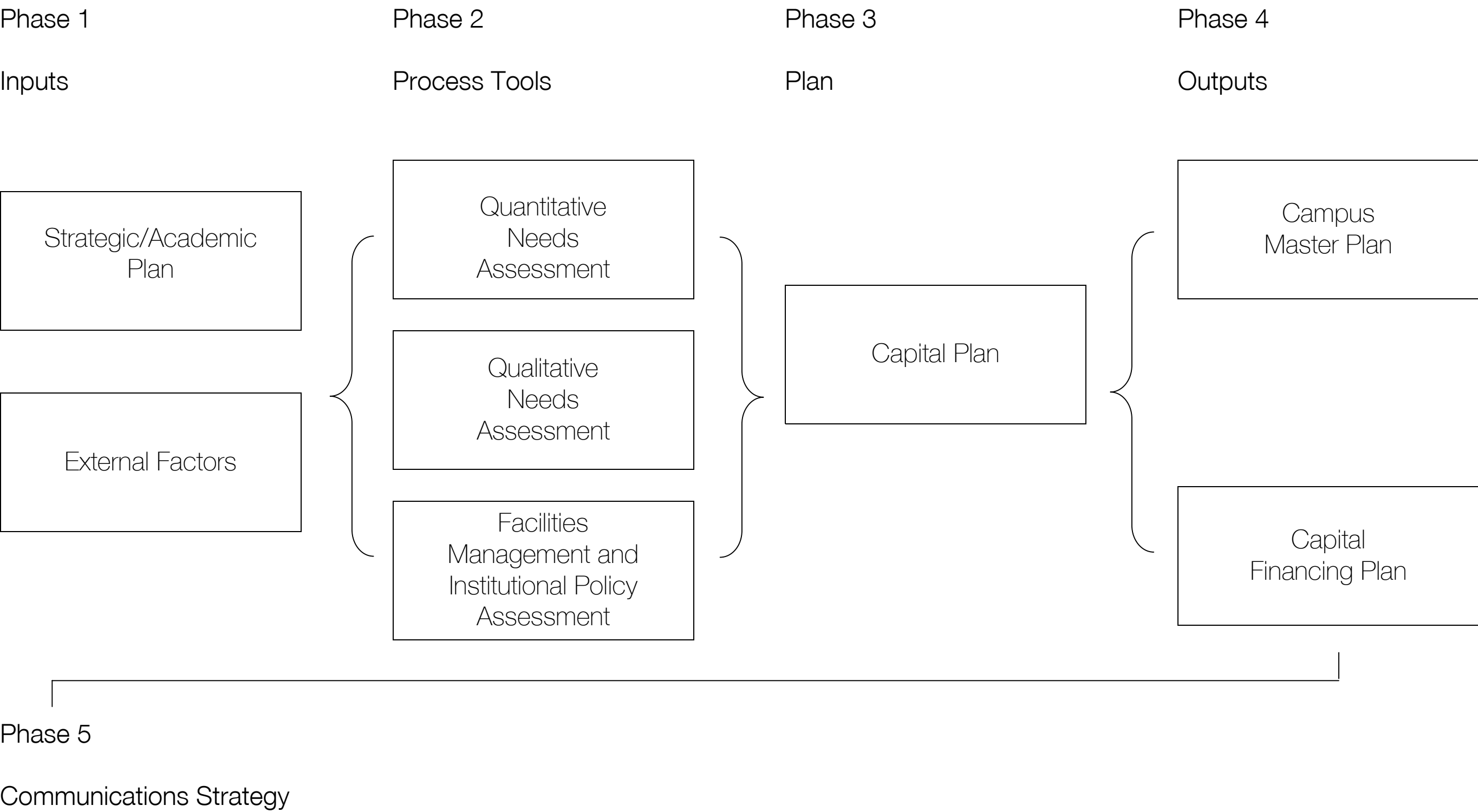
<i>Chemical Type</i>	<i>Applications per Year per Plant after Installation</i>
Insecticide spraying:	8
Fungicide spraying:	8
Root drench:	8
Dormant oil:	1
Pre-Emerge Weed Control:	4
Post-Emerge Weed Control:	8

END OF SECTION

Z:\UTD\601\Docs\SPecs\Bulletin 4\320190 Landscape Maintenance Period.doc

Capital Planning Process Model
Phase 1-5

CAPITAL PLANNING PROCESS MODEL



University Comparison Study

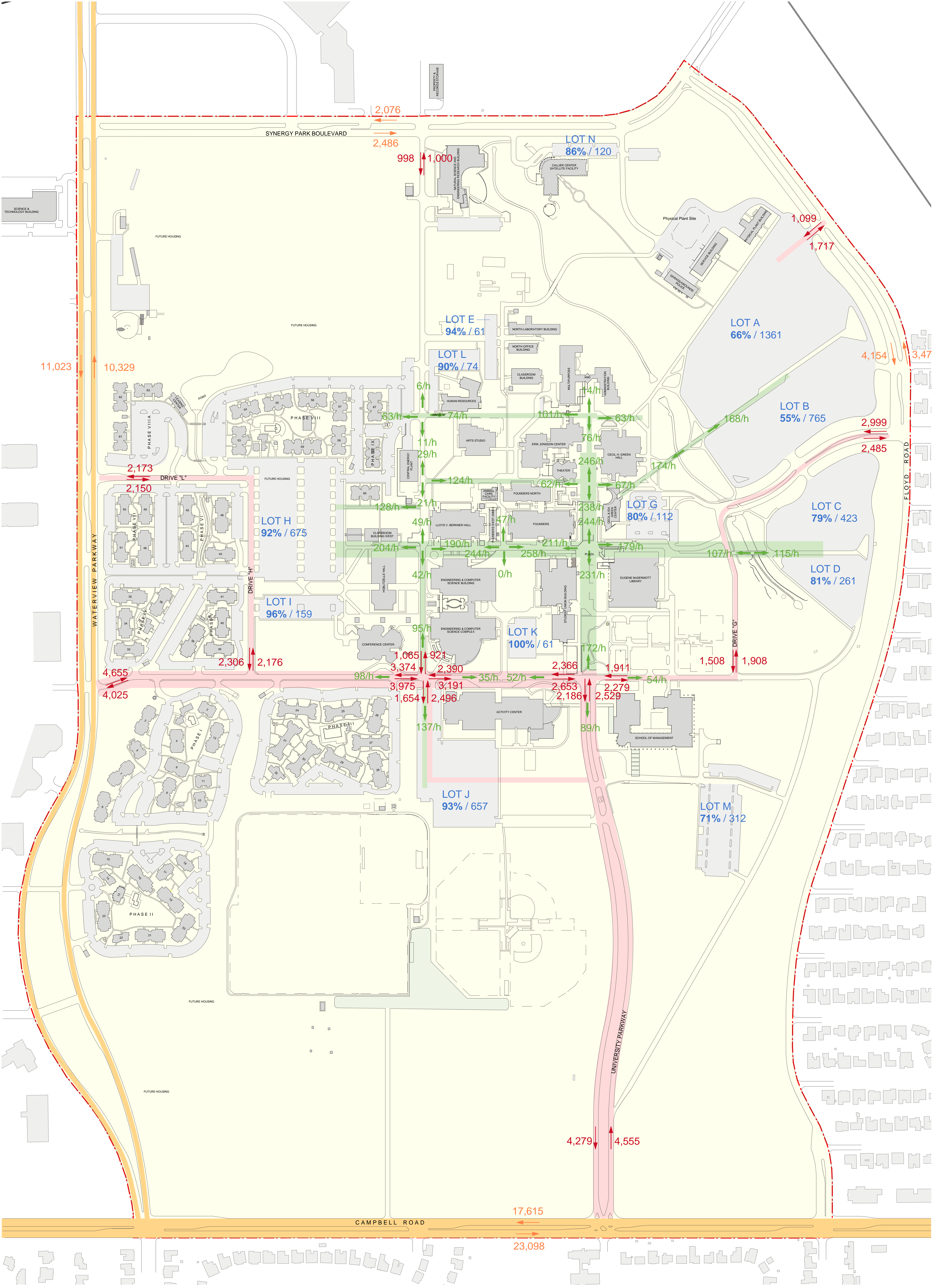
Comparison of UTD with Georgia Tech, University of Tennessee,
University of North Carolina, UC Santa Barbara.

CAMPUS COMPARISONS

	Year Founded	Campus (acres)	Faculty *	Student			Student/F aculty Ratio	Endow- ment (Mio)	Charac- teristics		FTE Student/Acre	Under- graduate Housing	Students on Campus Weekend	Ranking	non- residential GSF/FTE student	Assignable s.f. non- residential	FAR - only assignable non- residential sq.ft.
				Under- graduate	Graduate	Total			Urban	Sub- urban							
Georgia Tech	1885	400	900	11,841	5,172	17,013	19	454	y		42.50	64%	67%	38	464	7,898,509	0.45
Univ of Tenn	1794	550	1,350	20,232	8,266	28,498	21	498	y		52.00	33%	N/A	88			
UT Dallas	1969	555	696	9,412	5,068	14,480	21	222		y	26.00	21%	18%	127-182	100	1,457,303	0.06
U of North Carolina	1789	729	3,100	16,764	10,512	27,276	9	1,433		y	37.00	42%	N/A	27	458	12,492,408	0.39
UC Santa Barbara	1909	989	1,054	18,077	2,833	20,910	20	227		y	21.00	29%	N/A	47	62	1,296,501	0.03

* Faculty: inculdes teachers, professors, lecturers, but NO supporting staff
* Data Source: USNews:America's Best Colleges 2007

Traffic counts
Diagram



CARS

24h TRAFFIC COUNT UTD
(10/03/06 + 01/18/07)
MAIN FLOW CAMPUS

24h TRAFFIC COUNT
CITY OF RICHARDSON
(10/25/04 + 10/31/05 + 01/23/06)
MAIN FLOW CITY STREETS

PEDESTRIANS

PEDS. COUNT UTD
(10/03/06 + 10/04/06
+ 01/18/07
4h DAYTIME/DAY)
MAIN FLOW

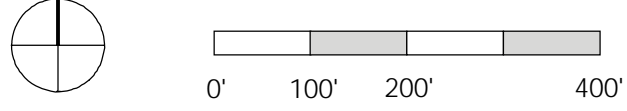
PARKING

PEAK TIME USE / TOTAL SPACES

CAMPUS
UNIVERSITY OF TEXAS AT DALLAS

Traffic count

UT System Project #: 302-244 - UTD Landscape Enhancement Project
Peter Walker and Partners



March 26, 2007
Scale (1" = 200')

Parking counts

Original survey and data analysis

University of Texas at Dallas
Parking Lot Allocation

All numbers are PEAK time counts (usually at 10am or 2pm)

Count 1 - December 2006 - Open spaces per parking lot

Count 2 - January 2007 - Open spaces per parking lot

Existing available parking spaces								TOTAL SPACES	Monday				Tuesday				Wednesday				Thursday				Friday			
Lot	Purple	Orange	Gold	Green	Visitor	Disabled	Meters		Count 1	Count 2	Av. Use	% used	Count 1	Count 2	Av. Use	% used	Count 1	Count 2	Av. Use	% used	Count 1	Count 2	Av. Use	% used	Count 1	Count 2	Av. Use	% used
									open	open	used	used	open	open	used	used	open	open	used	used	open	open	used	used	open	open	used	used
A	9	46	248	1045	8	5	0	1361	476	488	879	65%	470	431	911	67%	442	484	898	66%	431	429	931	68%	592	402	864	63%
B	0	13	284	465	0	3	0	765	297	366	434	57%	313	354	432	56%	301	371	429	56%	263	338	465	61%	467	388	338	44%
C	0	8	95	320	0	0	0	423	93	68	343	81%	52	50	372	88%	54	83	355	84%	43	54	375	89%	231	154	231	54%
D	0	0	45	216	0	0	0	261	14	22	243	93%	19	43	230	88%	23	40	230	88%	6	47	235	90%	127	145	125	48%
E	4	23	25	0	0	9	0	61	3	2	59	96%	3	2	59	96%	3	3	58	95%	3	4	58	94%	4	3	58	94%
F*	0	0	0	0	0	2	33																					
G	75	0	0	0	0	18	19	112	23	23	89	79%	17	12	98	87%	26	19	90	80%	29	21	87	78%	24	29	86	76%
H	2	15	186	455	7	10	0	675	42	82	613	91%	2	67	641	95%	13	49	644	95%	0	92	629	93%	112	93	573	85%
I	0	0	50	85	17	7	0	159	0	8	155	97%	0	6	156	98%	10	6	151	95%		6	156	98%	15	6	149	93%
J	0	14	229	395	0	19	0	657	8	34	636	97%	0	5	655	100%	16	26	636	97%	0	1	657	100%	194	184	468	71%
K	12	0	0	0	0	5	44	61	0	0	61	100%	0	0	61	100%	0	0	61	100%	0	0	61	100%	0	0	61	100%
L	3	52	15	0	0	4	0	74	6	0	71	96%	1	0	74	99%	0	4	72	97%	18	12	59	80%	16	14	59	80%
M	41	178	70	0	17	6	0	312	105	29	245	79%	89	87	224	72%	102	68	227	73%	56	78	245	79%	141	147	168	54%
N	0	5	24	54	34	3	0	120	1	36	102	85%	35	1	102	85%	1	34	103	85%	17	2	111	92%	5	39	98	82%
WSTC*	17	8	28	127	9	7	0																					
163 362 1299 3162 92 98 96								5041	1068	1158	3928	78%	1001	1058	4012	80%	991	1187	3952	78%	866	1084	4066	81%	1928	1604	3275	65%

*Lot F and WSTC not included in the total count



POLICE DEPARTMENT
THE UNIVERSITY OF TEXAS AT DALLAS
2601 NORTH FLOYD ROAD, RICHARDSON, TX 75080
Phone 972-883-2331 * Fax 972-883-2568

FAX

Transmittal Sheet

TO: Connie PWP & PARTNERS
FAX #: 510-849-9333
FROM: Steve Bettley
DATE: 2/5/07

Comments:

PARKING LOT Survey
1/29 — 2/2/07

Total pages including this page 6

DAY Monday

[illegible]

DAY Tuesday

DAY

[illegible]

DATE 1/31/07
DAY Wednesday

[illegible]

DATE 2/1/07
DAY Thursday

[illegible]

DATE 2/2/07
DAY FRIDAY

[illegible]

Campus University Parkway Traffic Analysis
Fehr & Peers / August 7.2007



MEMORANDUM

Date: August 7, 2007

To: Conny Roppell, Peter Walker Partners

From: Carlos Hernandez and Ellen Poling, Fehr & Peers

Subject: UT Dallas -- University Parkway Traffic Analysis

WC07-2418

SUMMARY

This memorandum summarizes a traffic analysis for two conceptual intersection redesigns along University Parkway on the University of Texas at Dallas (UT- Dallas) campus. The intersection redesigns at Campbell Road and Drive A were analyzed based on the concepts generated during team meetings and the April 2007 design charrette. Each of the potential designs was assigned traffic based on the April 2007 traffic counts. This provided specific details regarding intersection performance and potential conflicts. The conceptual design analyzed for *University Parkway/Drive A* is a large-rotary style intersection as shown in Figure 1. The design analyzed for *University Parkway/Campbell Road* is an uninterrupted crescent as shown in Figure 3.

Traffic forecasts were prepared for PM peak hour travel conditions for 2009 and 2017. The PM peak hour (5 PM to 6 PM) is the peak travel hour based on the April 2007 counts. The 2009 forecast demonstrates how the intersections would perform shortly after the conceptual designs are constructed. The 2017 forecast determines how the intersections would operate after the anticipated expansion of the UT-Dallas campus (an approximate doubling of the student body, and associated faculty and staff). The 2009 forecast anticipates that all background traffic will grow one percent per year. The 2017 forecast doubles the background traffic volumes for movements into and out of the UT Dallas campus, and assumes all other movements would grow at one percent per year.

A factor that is not accounted for in this analysis is redistributed traffic volumes based on future parking and construction of new buildings on campus. Both actions could significantly affect how many vehicles use these intersections. Accordingly, this analysis should be considered for a planning-level evaluation.

Table 1 summarizes the existing peak hour traffic volumes near the UT Dallas campus, based on the April 2007 data. Figure 1 shows the existing, 2009 and 2017 turning movements for the University Parkway/Campbell Road and University Parkway/Drive A intersections.

ANALYSIS METHODOLOGY

All study intersections were modeled using the Synchro/Simtraffic software package. Simtraffic was selected to determine delay at each intersection and travel times. Synchro results do not effectively calculate the consequence of closely spaced intersections and do not calculate delay for large-rotary style intersections. For these reasons each scenario was simulated in Simtraffic. Ten (10) simulation runs were conducted for each scenario and the measures of effectiveness (delay, queuing, travel time, etc.) for the ten runs were averaged to produce the results in this memorandum.

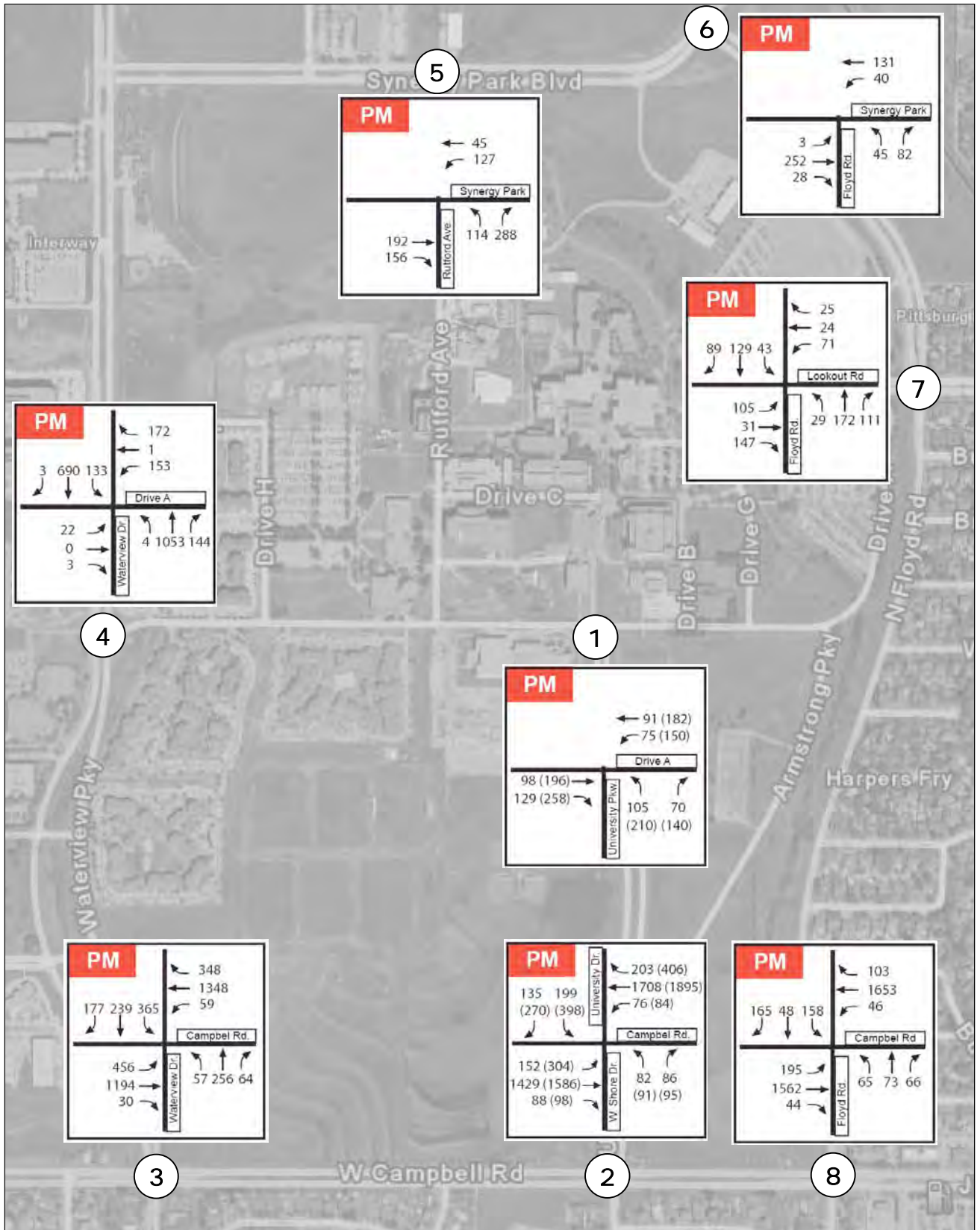
FINDINGS

The conceptual designs can accommodate traffic in the near term and in the future as the campus size doubles. The large large-rotary style design for the *University Parkway/Drive A* intersection will accommodate the forecasted traffic growth with minimal delay compared to the existing intersection configuration. The uninterrupted crescent design for the *University Parkway/Campbell Road* intersection will accommodate the forecasted traffic growth within minimal delay compared to the existing intersection configuration. Each of the intersections should be designed with high visibility crosswalks and use the latest pedestrian supportive intersection design techniques.

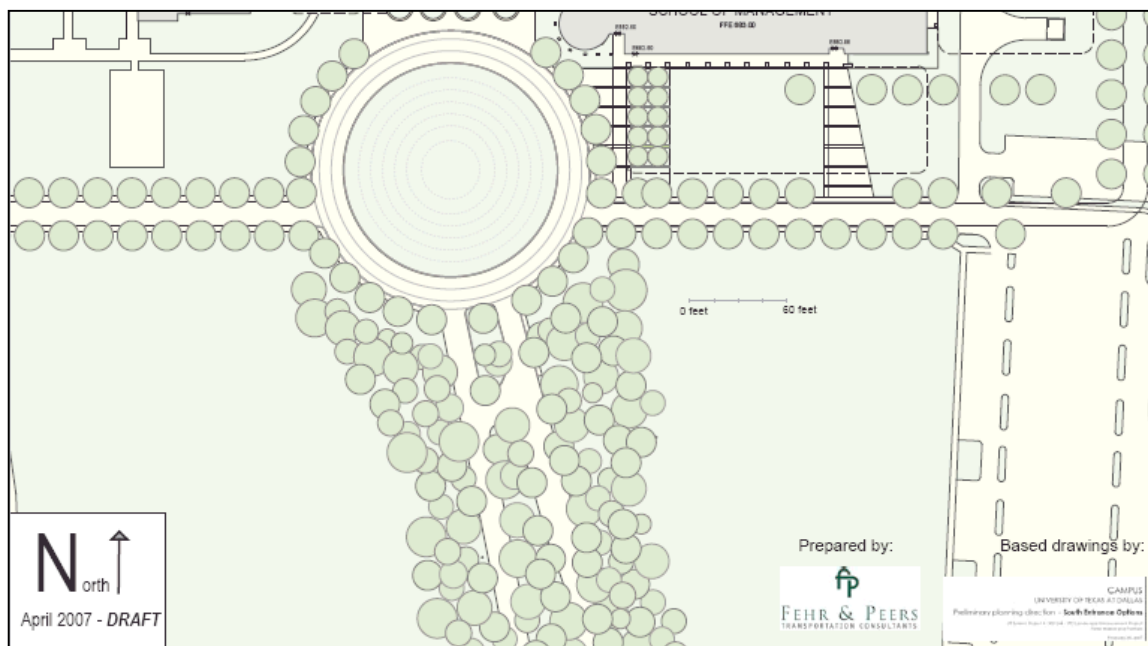
TABLE 1 – AVERAGE PEAK HOUR INTERSECTION VOLUMES

<p>TABLE 1</p> <p>AVERAGE PEAK HOUR INTERSECTION VOLUMES</p> <p>APRIL 2007 (COUNTS CONDUCTED 4/10 & 4/11)</p>			
Intersection #	Name	Peak Hour Volume	
		AM	PM
1	University/Drive A	256	568
2	University/Campbell	3,308	4,158
3	Campbell/Waterview	4,144	4,593
4	Waterview/Drive A	2,047	2,378
5	Synergy/Rutford	384	581
6	Synergy/Floyd	640	922
7	Floyd/Lookout	668	976
8	Floyd/Campbell	3,456	4,178
Source: Fehr & Peers, counts conducted in April 2007			

FIGURE 1 – AVERAGE PM PEAK HOUR TURNING MOVEMENT VOLUMES (2017 FORECAST VOLUMES)



2017 turn movement forecasts shown for intersection #1 and #2 only. (2017 forecast)

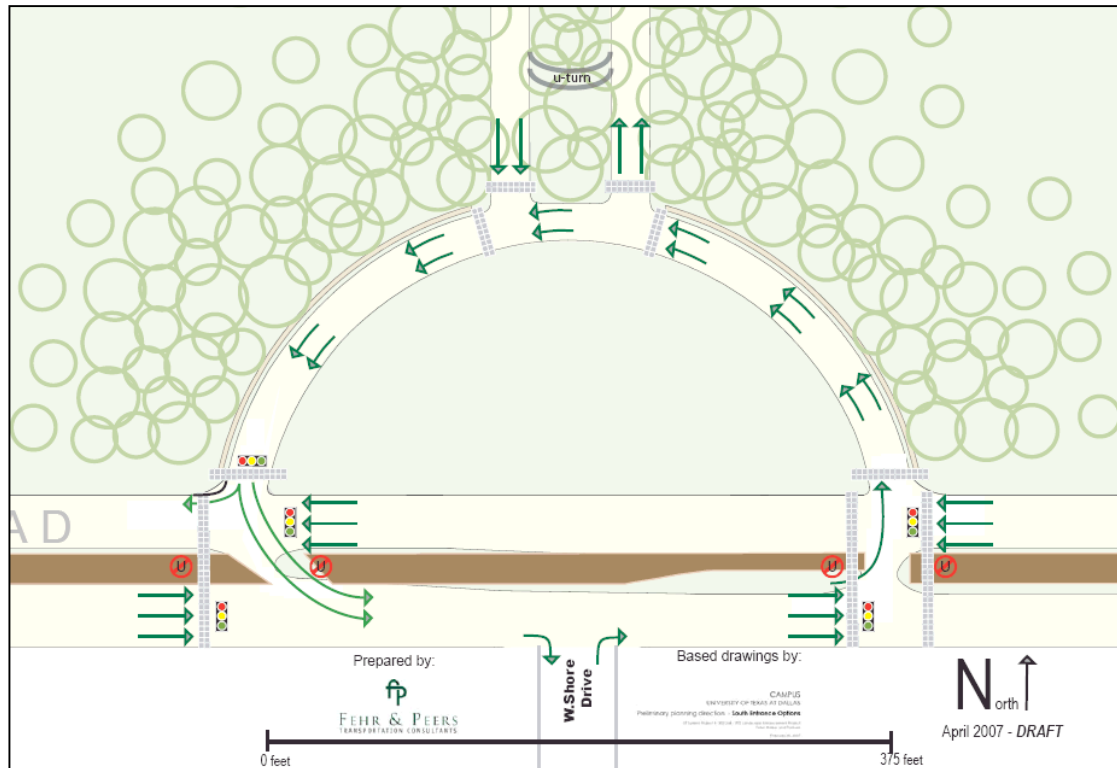
FIGURE 2 -- UNIVERSITY PARKWAY AND DRIVE A: LARGE- ROTARY STYLE INTERSECTION

ANALYSIS NOTES: The large-rotary style design was analyzed as a 320' external diameter single lane facility without on-street parking. The access control for each leg of the intersection was modeled using yield control. The results presented below highlight operations for a single lane design with no internal parking.

2009 OPERATIONS: All movements into and out of this design operate within acceptable levels of congestion. The longest wait time for any movement is 4 seconds (LOS A). The average delay per vehicle at this intersection is 3 seconds (LOS A).

2017 OPERATIONS: All movements into and out of this design operate within acceptable levels of congestion. The longest wait time for any movement is 5 seconds (LOS A). The average delay at this intersection is 4 seconds (LOS A).

ANALYSIS FINDINGS: This design can accommodate traffic in the near and long term with minimal peak hour delay. This design could utilize roundabout style entry treatments at the east, west, and south roadways. Given the orientation of buildings, a dedicated pullout for drop-off and short-term parking on the north end is recommended. Appropriate treatments for pedestrian crossings should be provided at each entry roadway. At least one connection from the outer sidewalk to the internal green space should be provided given the likelihood the green space will be a destination for pedestrians. Ideally, this connection would be provided at the north drop-off area. Travel lane widths and entry features that control speed should also be considered given the additional distance required to navigate certain movements.

FIGURE 3 -- UNIVERSITY PARKWAY AND CAMPBELL ROAD: UNINTERRUPTED CRESCENT

2009 OPERATIONS: All movements into and out of this design operate within acceptable levels of congestion. The longest average wait time for any movement at both intersections is 42 seconds (LOS D). The average delay per vehicle at the west intersection is 8 seconds (LOS A) and 7 seconds (LOS A) at the east intersection.

2017 OPERATIONS: All movements into and out of this design operate within acceptable levels of congestion. The longest average wait time for any movement at both intersections is 32 seconds (LOS C). The average delay per vehicle at the west intersection is 16 seconds (LOS B) and 14 seconds (LOS B) at the east intersection.

ANALYSIS FINDINGS: This design can accommodate traffic in the near term and in the future with minimal peak hour delay. The use of two intersections improves circulation for traffic entering and exiting the UT-Dallas campus while minimizing thru vehicle delay along Campbell Road.

FIGURE 4 -- CIRCULATION ISSUES ASSOCIATED WITH LEFT TURN RESTRICTIONS AT SHORE DRIVE



- Prohibiting left turns at this intersection will result in the redistribution of 82 vehicles in the near term and 91 vehicles in the future.
- Installing two new signals at the crescent intersection will limit the ability to install a signal at the intersection of Greenhaven Drive and Campbell Road (signal timing will be critical).
- Alternative routes west of the affected area (shown as purple lines on the map) will be used to access intersections that allow northbound left turns onto Campbell Road.
- There are 57 northbound left turns at Waterview and Campbell Road in the PM peak hour. If additional vehicles redistribute to this intersection as a result of the left turn restriction at Shore Drive, this intersection should continue to operate within acceptable levels of congestion.

**White Paper: Implementation of the UT Dallas
Strategic Plan**

Draft from David E. Daniel / May 14.2007



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White Paper: Implementation of the UT Dallas Strategic Plan

David E. Daniel
Draft Two: May 14, 2007

Executive Summary

The University of Texas at Dallas aspires to become a top-tier research university and recently developed a Strategic Plan that describes how it will achieve this goal. This white paper supplements the Strategic Plan and provides more detailed information about faculty hiring, student recruitment, construction of buildings, and finances.

Six strategic initiatives are discussed in the Plan. Some initiatives focus on expanding research in key areas such as biological and medical research, nanotechnology, security, energy, and health care. Some initiatives focus on our people and detail how we will strengthen education, develop leaders, and enhance diversity. Other initiatives outline how UT Dallas will interface with our community to help make a great city even greater.

Eight imperatives are essential to realizing goals. The first key imperative is increasing the faculty from the current size of 382 to 610 faculty members. The planned growth has been projected for each year over the next decade, and for each School, taking into account the critical need to increase the base of externally funded research to at least \$100 million per year.

Another key imperative is to increase the number of full-time students by more than 5,000, which will address the region's urgent need for top talent. The enrollment growth will be achieved by a 2% per year annual growth in existing programs and also by the creation of new academic degree programs, such as mechanical engineering, emerging media and communications, and healthcare management.

The University will need to construct 1.6 million square feet of new buildings at a cost of \$800 million. It will also need to raise \$450 million in private funds, principally for endowed scholarships, fellowships, and professorships/chairs for the faculty, but also to support key programs and schools and to achieve world-class excellence. In 10 years, annual operating expenses will increase by \$126 million per year over current levels (expressed in today's dollars), but annual income will increase by \$129 million, making the financial model of growth viable. The total program cost over the next 10 years is \$1.9 billion.

The critical elements in the next 3 years are private fund raising, approval and funding of the first new buildings that are needed, growth in student enrollment, and demonstrating ability to hire outstanding faculty who will themselves attract more outstanding people.

Introduction

The University of Texas at Dallas recently developed a broad ranging strategic plan, which may be found at the web site: <http://www.utdallas.edu/strategicplan/>. The purpose of this white paper is to provide specific information regarding the implementation of key elements of the strategic plan over the next 10 years. This paper covers five major topics:

1. Implementation plan for the 6 strategic initiatives and 18 sub-initiatives.
2. Implementation plan for the 8 strategic imperatives.
3. Plan for new buildings and infrastructure to support growth.
4. Financial plan.
5. Monitoring progress and measuring success.

Implementation Plan for the Six Strategic Initiatives

Initiative One: Tomorrow's Inventions

The University aspires to become one of the nation's best research universities. To achieve this, UT Dallas will invest heavily in areas of particular opportunity for research discovery and impact, especially in the natural sciences, health and medical sciences, engineering, technology, economic and policy sciences, and supporting areas.

Three specific areas are targeted for investment:

- 1.1 **Research Enterprise Initiative:** This project, called "Project Emmitt" by some, is a \$300 million economic development project between Texas Instruments, the State of Texas, the UT System, and UT Dallas to advance the Erik Jonsson School of Engineering & Computer Science to top-tier status. The project involves constructing a new Research Laboratory (completed), investing in new faculty positions and research (in progress), and attracting private and other funding for program support. The main tasks remaining to be completed are: (1) hire additional faculty members, and (2) raise more than \$60 million of additional private funds, primarily to endow graduate student fellowships and faculty chairs.

Additional Cost: Additional operating costs associated with new faculty hires and increased private fund raising are covered later in the "Imperatives" section.

Responsible Persons: Dean of the Erik Jonsson School of Engineering and Computer Science (program implementation) and Vice President for Development (private fund raising).

- 1.2 **The BioWorld:** Research discoveries in biology and medicine have enormous promise to be transformative for mankind. This initiative involves all of UT Dallas' Schools and entails collaborations with UT Southwestern Medical Center of Dallas. The principal activities are hiring faculty members whose work

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focuses on biological and medical discoveries, creating new academic programs such as Bioengineering, and investing in new programs, centers, and institutes.

Additional Costs: New faculty hires are covered later under “imperatives.” Annual recurring costs for new programs, centers, and institutes, will ultimately reach \$600,000 per year. Private support of \$10 million is also required.

Responsible Persons: Provost (academic issues), Vice President for Research (research matters), and Vice President for Development (fund raising).

- 1.3 **Nanotechnology:** UT Dallas will increase its research capacity in nanotechnology by hiring faculty members whose work focuses on nanoscale discoveries and investing in new programs, centers, and institutes.

Additional Costs: New faculty hires are covered later under “imperatives.” Annual recurring costs for new programs, centers, institutes, etc., will ultimately reach \$600,000 per year. Private support needed to support the Nanotechnology initiative is \$10 million.

Responsible Persons: Provost (academic issues), Vice President for Research (research matters), and Vice President for Development (fund raising).

Initiative Two: Preparing Students for Tomorrow’s Challenges

The main purpose of universities is to educate students and to prepare them for a lifetime of contribution, leadership, and personal fulfillment. Four areas identified for investment are:

- 2.1 **The Education of Leaders:** The University will augment its current educational programs by expanding upon, rounding out, and interrelating existing Schools and programs to ensure that the educational experience prepares students to meet leadership challenges. The University will create a Center for Teaching and Learning Excellence to ensure teaching excellence and leadership training and an Institute for Public Affairs to enhance training for public-sector leaders.

Additional Costs: This initiative will require \$200,000 of additional annual operating funds.

Responsible Person: Provost.

- 2.2 **Living-Learning Communities:** Living-learning communities integrate learning experiences into the residential life. Faculty members lead informal discussion sessions and structured conversation about topics of importance to students, bringing an important added dimension of instruction to residential housing.

Additional Costs: The increased cost of expanded living-learning communities will eventually reach \$200,000 per year.

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Responsible Person: Vice President for Student Affairs.

- 2.3 **Investment in People:** Universities are defined by its people. The University will recognize and reward excellence at all levels. Investments in people will require new resources, such as endowment gifts for professorships and scholarships. The University will support a variety of student-centered programs that invest in development of people, such as the student newspaper, the Multicultural Center, the Student Union and activities, and Division III sports.

Additional Costs: The main funding need is private support for endowed scholarships, fellowships, and named faculty professorships and chairs, which are discussed later in the “Imperatives” section.

Responsible Persons: Provost, Deans, Vice President for Student Affairs, and Vice President for Development.

- 2.4 **Enhancement of Diversity and Inclusion:** A vigorous diversity program will be initiated and coordinated by a university leader who will be hired to fill a new vice presidential position. The University will strengthen programs that will attract a diversity of talented people at all levels, and create a culture that celebrates diversity and inclusion.

Additional Costs: An additional \$300,000 of annual funds will be needed.

Responsible Person: Vice President for Diversity.

Initiative Three: Managing Change in a Constantly Changing Society

The University will lead the constructive management and adaptation to our changing world. Two areas will be the focus of investments:

- 3.1 **Dynamic Change Management:** The University will create a campus-wide program for dynamic change management to serve as a spark and catalyst for change, cutting across all of UT Dallas’ schools. The newly created Center for Behavioral and Experimental Economics Science, Center for Values in Medicine Science & Technology, and the Institute for Innovation and Entrepreneurship are examples of programs that can inform and lead constructive change.

Additional Costs: Additional annual funding of \$200,000 is needed.

Responsible Person: Provost.

- 3.2 **Innovative Centers and Institutes:** The University will support existing excellent programs, centers, and institutes, and will invest in new “grand challenge” programs with potential for major impact. Preliminary concepts include themes such as “innovation,” “creativity,” “global software,”

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multinational business,” global communications,” “the health care system,” “multicultural issues in a global world,” and “public policy in a flat world.”

Additional Costs: Some costs for innovative centers are covered in the BioWorld and Nanotechnology initiatives discussed earlier, and some in the initiative on enhanced quality of life discussed later. Additional programs, centers, and institutes will ultimately require new recurring funding of \$600,000 per year. In addition, private gifts totaling \$10 million will be needed to establish excellence within the programs covered by this initiative.

Responsible Persons: Provost and Deans (academic issues), Vice President for Research (research issues) and Vice President for Development (fund raising).

Initiative Four: Securing the Safety of the Future

Terrorism and natural disasters threaten the nation’s security. UT Dallas will contribute to ensuring the safety of the nation’s citizens, not only through new technology and new knowledge, but also by promoting awareness. Two areas will receive priority for investment:

- 4.1 **National and Global Security:** The University will strengthen existing programs and build new programs that address critical security issues, such as cyber security and bio-threats. These programs will build on existing strengths, such as the Center for Global Collective Security, together with programs in geospatial information science and criminal justice. Investments will require new people, infrastructure, and program support.

Additional costs: The principal cost to implement this initiative is new faculty hiring, which is covered later. Annual recurring costs of \$200,000 are ultimately required for program support. Private giving totaling \$2.5 million is planned.

Responsible Persons: Provost (academic issues), Vice President for Research (research issues), and Vice President for Development (fund raising).

- 4.2 **Energy and the Environment:** The University will contribute to addressing the region’s critical energy needs, and ameliorating environmental impacts related to energy production and use. Investments will require leadership in geosciences, with important science and engineering inputs from other programs, and hiring of new faculty to provide this leadership. In addition, public policy issues will be integrated to develop solutions to issues related to energy and the environment.

Additional costs: The principal cost to implement this initiative is new faculty hiring, which is covered later. Annual recurring costs of \$200,000 are ultimately required for program support, which is expected to attract significant external research funding. Private support for programs of \$2.5 million is planned.

Responsible Persons: Provost (academic issues), Vice President for Research (research issues), and Vice President for Development (fund raising).

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Initiative Five: Improving Health and Quality of Life

This strategic initiative is focused on improving the health and quality of life of individuals and society. Two initiatives will be the focus of investments:

- 5.1 **Life Science Health Collaborations:** UT Dallas will strengthen collaborations with UT Southwestern Medical Center of Dallas to conduct research on essential life science questions, and to deliver quality care interventions to citizens of the area. At every opportunity, UT Dallas will seek joint appointments for new faculty hires and shared use of facilities and program initiatives.

Additional Costs: Essentially all additional costs are associated with hiring new faculty members, which are outlined later.

Responsible Person: Provost.

- 5.2 **Enhanced Quality of Life:** The University has two centers that are critical to this initiative: the Callier Center for Communication Disorders and the Center for BrainHealth. The University will strongly support these and other programs that enhance the quality of life of citizens in our region, from health care to continuing education. For example, the Center for Child and Family Development and several other programs and centers, both existing and planned, will be priorities.

Additional Costs: Additional private funds of at least \$20 million are required. Additional recurring funding of at least \$1.4 million per year will be needed.

Responsible Persons: Provost, Deans and Directors of Centers or Institutes, and Vice President for Development.

Initiative Six: Making a Great City Even Greater

A leading university contributes significantly toward enhancing the quality of life in its community. Five initiatives will be given priority:

- 6.1 **K-16 Education:** The University will strengthen programs such as the Teacher Development Center, Academic Bridge Program, Science and Mathematics Education, and interactions with local museums and science programs. The University is currently implementing a program similar to the UT Austin UTeach program, which produces math and science teachers.

Additional Costs: Over the next decade, \$5 million of private support will be needed to implement successfully programs such as UTeach. Additional faculty will be hired, but that costs for new faculty are detailed later. Recurring funding of \$200,000 per year will ultimately be needed to support strengthened programs.

Responsible Persons: Provost, Deans, and Vice President for Development

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- 6.2 **The Arts:** UT Dallas will contribute to a healthy and vibrant arts community, bringing our arts programs to the community and infusing the region with fresh ideas and talent. Dallas has a burgeoning arts district and strong computer software industry for computer gaming and entertainment, which provides excellent opportunities for synergistic interactions.

Additional Costs: Private gifts totaling \$5 million will be necessary to realize the potential. Recurring expenses of \$200,000 per year will ultimately be necessary.

Responsible Persons: Dean of the School of Arts and Humanities and Vice President for Development.

- 6.3 **Business Leadership:** The School of Management is the largest of UT Dallas' schools, and a very important asset to the area's business community. The University will continue to train the business leaders that the region will need, and will expand its offerings, with emphasis on entrepreneurship, interactions with other programs such as medicine and public administration, and its executive education program.

Additional Costs: Additional recurring costs, not counting new faculty, will eventually total \$1 million.

Responsible Party: Dean of the School of Management.

- 6.4 **Community Outreach:** The University will create a Community Outreach Office to coordinate various programs that engage students, faculty, and staff with the community. The activities will range from volunteer assistance for needy individuals to high-tech assistance in the classroom or with special projects.

Additional Costs: Because this program draws on volunteer time from employees and students, costs are minimal. Recurring expenses to manage the program will eventually reach \$100,000 per year.

Responsible Persons: Director of Community Outreach Office, Vice President for Diversity, and Vice President for Student Affairs.

- 6.5 **University Village:** UT Dallas will use unoccupied land to develop places of business where university residents and the community can co-mingle, such as restaurants, bookstores, and university-related businesses.

Additional Costs: None, except for small administrative cost associated with contracts and accounting. The leasing of land will bring income to UT Dallas.

Responsible Person: Vice President for Business Affairs.

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Implementation Plan for the Eight Strategic Imperatives

Imperative One: Double Size of Faculty

At the beginning of the 2006-07 academic year, UT Dallas had 382 full time equivalent (FTE) tenured and tenure-track faculty members. As discussed in the strategic plan, to compete with the best universities in the nation, the university must increase the size of its faculty, eventually reaching a faculty of 800 to 1,000.

Within the next 10 years, the University's goal is to increase the faculty to 610 people. The planned hires and schedule for growth are shown in Table 1. The largest growth is planned for the sciences and engineering, where the opportunity for research and new discoveries is greatest, and in other areas that are vital to the region's economy and well being. This growth pattern builds on existing strengths and core areas. Of course, actual hiring will vary depending on student demand, research productivity, and other factors, but Table 1 provides a planning guide for expansion.

Table 1. Distribution of Planned Faculty Hires.

School	Current Faculty	Faculty in 5 yrs	Faculty in 10 yrs	New Faculty in 10 yrs	Faculty Engaged in Externally Funded Research in 10 yrs
Arts & Humanities	43	52	65	+22	14
Behavioral & Brain Sciences	38	45	53	+15	45
Economic, Political, & Policy Sciences	60	68	80	+20	40
Engineering & Computer Science	86	138	175	+89	150
General Studies	3	3	3	-	1
Management	78	92	107	+29	10
Natural Sciences & Mathematics	74	102	127	+53	110
TOTAL	382	500	610	228	370

Each of UT Dallas' schools will contribute to the realization of the University's goals via faculty hiring. The rationale and opportunity for growth in each school is as follows:

- Arts & Humanities: The Arts and Technology Program has experienced strong growth in enrollment (500 new students in the program in just 3 years), research (e.g., the U.S. Army), and entrepreneurial success (e.g., student David Hanson's advances in robotic human faces and resulting start-up company). Also, emerging media and communications offer major potential for growth, as do interdisciplinary research

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centers that integrate arts and humanities with science, medicine, and technology. The focus is on “applied humanities.” Expanded language offerings to meet the need for people skilled in languages such as Chinese and Arabic offer growth opportunity.

- **Behavioral & Brain Sciences:** Major research opportunities exist in communication disorders (Callier Center), neurosciences (Center for BrainHealth), and subjects such as child learning, face recognition algorithms, and aging & memory. New programs in psychological sciences and speech pathology offer growth opportunity, as well.
- **Economic, Political, & Policy Sciences:** This School, which has undergone rapid growth and recently started 5 new Ph.D. programs, has major research programs in criminology, economics, geospatial sciences, politics, public policy, and public management. Successful research centers provide collaborative platforms upon which to build further research excellence. Growth opportunities include international political economy and several other areas.
- **Engineering & Computer Science:** Growth of engineering and computer science is critical to the University’s future success. Many of the programs typically found at leading engineering schools have not yet been implemented in this young School. New programs will include: materials science and engineering, bioengineering, mechanical engineering, and chemical engineering.
- **General Studies.** This popular, interdisciplinary degree program will continue to play a significant role. The program is not a major research program but is vital to the academic mission of the institution, and relies heavily on faculty and courses in other schools. Growth will include additional interdisciplinary educational programs.
- **Management:** The School of Management is the University’s largest school and one of the most research-intensive business schools in the nation. Strength in quantitative aspects of business systems, such as supply chain logistics and management of technology businesses, creates opportunity for externally funded research and collaboration with other schools. Growth will emphasize research, technology, and meeting the needs of the area’s businesses. New programs will explore opportunities in areas such as health care management and entrepreneurship.
- **Natural Science and Mathematics:** Large growth potential exists for research in the biological, chemical, physical, and mathematical sciences. This School will play a key role in virtually every major research initiative. New program opportunities include actuarial science, biostatistics, biotechnology, and math/science education.

The University will attain its research goal of \$100 million per year of external research funding by increasing the number of faculty members actively engaged in external research and increasing the average research productivity of its faculty. As indicated in Table 1, when the faculty totals 610 members, at least 370 will be actively engaged in externally funded research. The average productivity of research-active faculty members at major universities is about \$250,000 per person per year. This amount times the planned 370 research-active faculty members yields annual research productivity of \$92.7 million. The University will also hire at

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least 25 non-tenure-track research scientists and engineers who will produce at least \$7.5 million of annual research funding. In addition, UT Dallas expects to better the national averages, but even with average productivity, the goal of \$100 million of research funding can be reached.

Funds to expand the faculty are needed in four categories: (1) annual operating costs to cover salaries, fringe benefits, and staff; (2) start-up costs for new faculty; (3) excellence funding in the form of endowed professorships and chairs; and (4) new building space.

The required annual operating funds at the end of 10 years of growth, expressed in today's dollars, are as follows:

1. The new faculty positions will each cost about \$315,000 per year, which includes salary, fringe benefits, support personnel (bookkeepers, building maintenance personnel, teaching assistants, etc.), and indirect costs such as infrastructure, energy, and security. The \$315,000 figure is slightly below the current UT Dallas average and assumes economies of scale as the University grows.¹ Total annual cost at full implementation: 228 people x \$315,000 per person = \$72 million.
2. The University will need to replace any faculty members who depart. Some replacements will cost more than those who are replaced, and some less. The average salary and overhead expense for replacement hires should be about the same as for the people who will be replaced.
3. Private funds will be raised to pay for endowed professorships and chairs, as discussed later under the private funding section.
4. The building program required for implementing the strategic plan is discussed later.

Start-up costs will be incurred for most of the faculty hired. Based on experience at top-tier universities, the average start-up cost for research-active faculty members is estimated to be \$330,000 per person. Start-up funding will be needed for 305 new people (some hired in new faculty positions and some hired in replacement positions). The total start-up cost is 305 people x \$330,000 per person = \$100 million (today's dollars).

The \$300 million engineering excellence program retains a balance of \$15 million to pay start-up costs for new faculty hires. A new Nanoelectronics Initiative from the State is expected to provide at least \$5 million of start-up funding. These two initiatives reduce the residual start-up burden from \$100 million to \$80 million. Over a 10-year period, the average annual cost is \$8 million per year. As indicated later, \$5 million of this \$8 million will be paid from research income and \$3 million from other sources, such as UT System programs (e.g., STARS).

Thus, the total additional annual operating costs 10 years from now (not counting new buildings and private gifts for professorships and chairs) needed to pay for the expansion of the faculty is $\$72 + \$8 = \$80$ million per year. To summarize:

¹ Economies of scale are realized from fixed administrative costs (e.g., the number of presidents, vice presidents, and deans will remain fixed as the institution grows), from shared equipment and facilities as research teams are expanded, and from lower unit costs with expanded scale.

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- Additional Costs: \$80 million per year in 10 years (plus buildings and gifts)
- Responsible Persons: Provost and Deans.

Imperative Two: Enroll 5,000 New Students

The Founders created UT Dallas to meet the region's need for top talent. As UT Dallas scales up the size of its faculty, it will also scale up the number of students enrolled, thereby better addressing the region's rapidly growing need for outstanding talent.

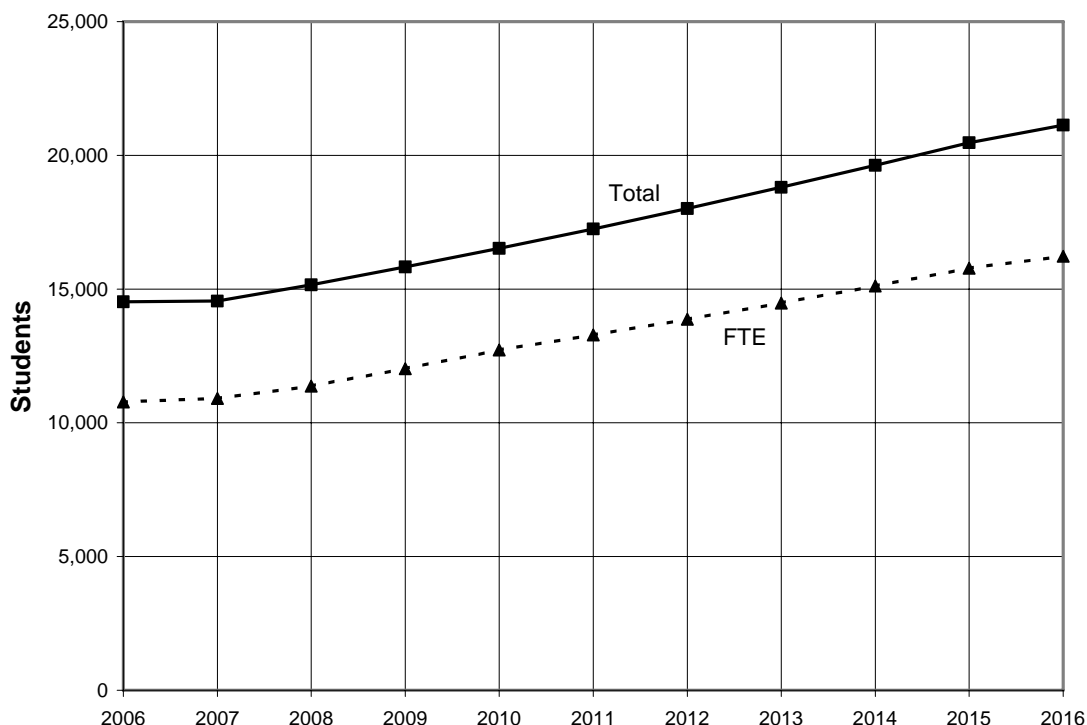
At the beginning of the 2006-07 academic year, UT Dallas enrolled 14,523 total students and 10,778 full-time-equivalent (FTE) students. Graduate students comprise 35% of the current student body. Enrollment growth is planned to be split 50/50 between undergraduate and graduate students. The University will add new FTE students through 2% annual growth in existing programs and creation of new programs outlined in Table 2. A graph of the planned growth in FTE students and total students is shown in Figure 1.

Table 2. Proposed New Degree Programs and New Student Enrollment in 10 Years.

School	New Degree Programs	New Students
Arts and Humanities	Arts and Technology (Ph.D.), Emerging Media & Communication, and Medical & Scientific Humanities	390
Behavioral and Brain Sciences	Psychological Sciences (MS) and Speech Pathology (Ph.D.)	50
Economic, Political, and Policy Sciences	International Political Economy (BS, BA, MS), Public Policy (MPP), Legal Studies (MLS), Legislative Affairs (MA), and Political Science (MA)	420
Engineering and Computer Science	Materials Science and Engineering, Bioengineering, Mechanical Engineering, and Chemical Engineering	1,040
Management	Healthcare Management (MS), Supply Chain Management (MS), Finance (MS), and Marketing (MS)	600
Natural Sciences and Mathematics	Actuarial Science, Biostatistics (MS, Ph.D.), Biotechnology (MS, Ph.D.), Molecular Biophysics (BS), and Science and Math Education (MS, MAT, MAIS, Ph.D.)	320
TOTAL		2,820

Note: When no degrees are listed, all three degrees (baccalaureate, masters, and Ph.D.) are planned.

Figure 1. Projected Student Growth over the Next 10 Years.



The University has four essential cohorts of students that it recruits: (1) freshmen; (2) undergraduate transfer students; (3) Masters students, and (4) Ph.D. students.

The freshmen class comprises about half the incoming group of undergraduates. Admissions are highly selective – the average SAT score of UT Dallas’ freshmen class is the highest among public universities in Texas. Merit-based scholarships are an essential component in attracting a top-quality freshmen class. The steps that will be taken to recruit more freshmen and transfer students are: more and better communication with more prospective students; more and better mass communications and messaging; strengthened relationships with counselors; expanded summer and outreach programs; and more and better student visits to campus.

Masters students are the core graduate population, whose presence enables the University to offer critical courses essential to sustain top-quality graduate programs. General knowledge about the University and its high-quality programs are keys to attracting more Masters students, as is engaging prospective students who inquire about our programs or visit our campus. The University will work closely with its Schools in its messaging and recruiting of Masters students.

Ph.D. student recruiting occurs primarily by the Schools and the faculty. However, the strong undergraduate class at UT Dallas is perhaps the best recruiting ground for top talent in the Ph.D. program. The “get doc” program recently implemented by the Erik Jonsson School of

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Engineering and Computer Science is an example of a successful, focused initiative to encourage UT Dallas' best students to continue on to the Ph.D. degree at UT Dallas.

Additional Costs: Additional costs necessary to recruit 5,000 new students per year in 10 years are: approximately \$500,000 per year additional recurring expenditures for expanded student recruiting; \$5 million per year for expanded student services proportional to increased student enrollment; \$8 million annually in additional need- and merit-based financial aid; and \$2 million annually for expanded Library operations. These additional annual costs total \$15.5 million per year. Private funding for more scholarships, fellowships, and new buildings is discussed later.

Responsible Persons: Provost, Vice President for Communications, Vice President for Student Affairs, and Associate Provost for Enrollment Services.

Imperative Three: More than Double Research

Annual research expenditures are increasing steadily and were \$42 million last year. To meet its goals, UT Dallas must increase its annual research expenditures to at least \$100 million. The strategy for accomplishing this goal is to expand the faculty, as discussed earlier. Major research universities also employ professional research scientists and engineers, who pay much of their own salary from research contracts that they secure, and are very effective in maintaining quality laboratories and training students. The average cost per staff member not covered by research contracts should be about \$40,000 per year, for a total of \$1 million per year for 25 research scientists and engineers.

The increased research productivity will bring in \$18 million per year of additional indirect cost recovery (ICR), or overhead, income. Of this, \$5 million will be used to fund start-up packages (this cost has already been accounted for in the earlier imperative on faculty growth), and will be managed by the Deans and the VP for Research. Additional costs include: (1) \$700,000 per year for expanded research administration, proposal preparation, and contract administration and accounting; (2) \$2 million per year assigned to the faculty who generated the research income to reward success and provide support for research and new research ideas; (3) \$4 million per year for research support by the VP for Research; and (4) \$4 million per year for support of research activities in the Schools.

Additional Costs: Approximately \$11.7 million per year for additional staff

Responsible Person: Vice President for Research and Deans.

Imperative Four: Tell UT Dallas' Story Better

The University will communicate its unique strengths and accomplishments with all major stakeholders, which include prospective students and their parents, current students, faculty and staff, alumni, research sponsors, donors and prospective donors, elected officials, and

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thought leaders in our region, state, and nation. Additionally, UT Dallas will promote understanding of its focused areas of excellence and its unique heritage.

A top-quality marketing and communications effort led by a Vice President for Communications, with a substantial increase in staffing and funding, will be charged with telling our story better. High priority will be placed on newsletters and other forms of publications (paper and electronic), appropriate advertising, and strengthened web communications.

Additional Costs: Approximately \$2 million per year, recurring.

Responsible Person: Vice President for Communications.

Imperative Five: Improve Annual Giving and Endowment

Hiring new faculty and recruiting more students will not, by itself, generate world-class excellence. Achievement of excellence will require more. The essential investments in people, programs, and facilities are discussed below.

Investments in People. The funding needed to empower UT Dallas to attract and retain world-class people is summarized as follows:

1. Endowed professorships and chairs. Discretionary funding and the distinction of a named position are becoming essential in recruiting and retaining outstanding faculty members. Typically, top-tier research universities award professorships and chairs to at least 20% of the faculty. With 610 faculty members, UT Dallas needs at least 120 endowed professorships and chairs. Currently, UT Dallas has 30 endowed professorships and chairs. To achieve the minimum necessary, the University will need to add 90 new endowed professorships and chairs over the next 10 years, which will require an additional \$90 million of endowment. The current engineering enhancement project is expected to generate about 30 of these chairs.
2. Faculty start-up funding. Newly hired faculty who conduct research typically need expensive equipment to launch successful research programs. Private and corporate funding, programmed for \$5 million, will be needed to support start-up costs.
3. Graduate student fellowships. The very best universities provide fellowship funds for the most talented and gifted graduate students. A fellowship program that would support 100 students is needed to ensure a reasonable level of viability. Each fellowship would require an endowment of about \$500,000, for a total endowment of \$50 million. A signature graduate fellowship program would be especially valuable.
4. Eugene McDermott Scholars Program. This undergraduate scholarship program is one of the most successful and visible programs for undergraduate students, and adds immensely to the University's success in recruiting the very best students entering college. The program needs to be scaled up as the University grows. An increase of \$10 million in endowment would allow needed expansion of the program.

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5. Scholarships for undergraduate students. Although various programs are available to provide financial aid to qualified students, the amount of money available is not adequate to meet the needs of talented students in the region. Private support must supplement other sources. An endowment of \$30 million is needed to fund this scholarship program at the minimum level of impact needed.

Investments in Programs. The University cannot achieve its goals unless its schools and major research centers distinguish themselves and establish a level of excellence competitive with the best in the nation. The necessary investments include the following:

1. Endow Schools. The University needs to develop unrestricted endowment to support excellence in UT Dallas' schools. At universities, these endowments are usually created via a large gift to a school, which often results in the naming of the school. One school (the Eric Jonsson School of Engineering and Computer Science) is already named, but the others are not. In aggregate, if UT Dallas attracts endowment gifts to name three schools, the endowment from the three gifts would likely total around \$90 million. This would provide sufficient annual discretionary funding to launch new initiatives, hire outstanding people, provide support to exceptional students, and attain excellence.
2. Program support. The University will strengthen successful programs, such as the Academic Bridge Program, the Center for BrainHealth, and the Callier Center for Communication Disorders, and invest in new programs, centers, and institutes, as discussed in the "Strategic Initiatives" section earlier. In aggregate, private support totaling \$30 million in endowment and \$30 million in expendable funds is needed over the next 10 years to achieve and sustain world-class excellence. Funds will be used to seed new research projects, pay for guest lecturers, build bridges to the community, support faculty and student activities, and to produce at a level that is competitive with the best programs in the country.
3. Campus enhancement. Thanks to a major private gift, a campus landscape enhancement program is currently under way. This important program will continue indefinitely and will transform the appearance of the campus into one that is consistent with a university of the first class. The University will seek a minimum of \$20 million of additional private support to further campus landscape enhancement.
4. The arts. Private giving, expected at \$5 million, will be critical to continued growth and expansion of UT Dallas' very successful arts program, emphasizing new artistic expression forms, technology applied to art, and outreach to Dallas' arts community to infuse it with the fresh ideas and approaches offered by our faculty and students.

Investments in Research. Successful research universities attract millions of dollars a year of unrestricted private and industry money to support research in areas of particular interest to the company or individual supporting the work. These funds typically total about 5 to 10% of the total research enterprise, meaning that UT Dallas should anticipate \$5 to \$10 million of private research support per year when it reaches tier-one status. Over a ten-year period, gifts for research are planned to total \$30 million.

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Buildings. Private support will be needed to motivate and leverage other dollars for building construction and renovation. The University plans on \$60 million to support this effort.

Institutional Commitment to Fund Raising. In the past 18 months, the University has made a major commitment to building a larger and stronger organization for private fund raising, adding about a dozen new professional staff. The University will continue to expand this effort to ensure that it has adequate resources to raise the necessary funds. It is also important to engage alumni and to build loyalty and support from tomorrow's prospective donors.

The University will need to launch a capital campaign to raise the funds needed. The campaign will likely have three phases: first the research phase to define the scope of the campaign, then a "quiet phase" of fund raising, and finally the "public phase."

Summary. The 10-year private fund raising plan is summarized in Table 3. The funds needed to achieve top-tier excellence total \$450 million.

There is a cost associated with launching a major capital campaign in terms of additional staff such as major gift officers, communications specialists, etc., as follows:

Additional Costs: Approximately \$1.6 million per year, recurring.

Responsible Persons: Vice President for Development.

Table 3. Summary of 10-Year Private Funding Needs for UT Dallas.

Program Funded by Gift	Amount for Endowment (\$ million)	Amount for Current Use (\$ million)
Faculty Professorships and Chairs	90	
Graduate Student Fellowships	50	
Expand Eugene McDermott Scholar Program	10	
Scholarships for Undergraduates	30	
School Endowments (Naming Opportunities)	90	
Signature Programs and Laboratories	30	30
Buildings		60
Faculty Start-Up		5
Research		30
Campus Enhancement		20
Arts		5
SUBTOTAL	\$300 Million	\$150 Million
GRAND TOTAL	\$450 Million	

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Imperative Six: Increase Number of Ph.D.'s Granted

The University currently awards 100 Ph.D.'s per year, and plans to increase this to 300 Ph.D.'s within ten years. If the university increases the size of its faculty and student body, more than doubles its research, strengthens its diversity, and attracts the private funding necessary to establish true excellence, the Ph.D. count should increase to the stated goal.

Imperative Seven: Enhance Graduation Rates

Although graduation rates for UT Dallas are above the national average for public universities, they are below our expectations, given the high quality of our entering freshmen. The University's goals, which have been reported to the UT System, are summarized in Table 4.

Table 4. Graduation Rate Goals for UT Dallas.

Graduation Rate	UT Dallas – Current	National Average	UT Dallas – 2010 Goal	UT Dallas – 2015 Goal
4 Year	32%	26%	38%	47%
5 Year	52%	47%	57%	62%
6 Year	57%	53%	65%	72%

To improve graduation rates, UT Dallas will improve student success in critical freshmen gateway courses, strengthen advising, identify academic problems earlier, improve student engagement in the university's activities, tutor better, and take other similar actions.

Additional Costs: Annual costs of \$200,000 per year.

Responsible Persons: Provost and Vice President for Student Affairs.

Imperative Eight: Reduce Costs

The University will constantly explore ways to reduce costs. UT Dallas, in cooperation with other UT System institutions, is developing a shared services model for its computer systems. The University will explore other ways to achieve efficiencies, for example, through technology-based course delivery systems. The Vice President for Business Affairs is the main responsible party, but the Provost, Vice President and Chief Information Officer, and Vice President for Student Affairs are responsible for cost savings in their areas of responsibility.

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BUILDING AND INFRASTRUCTURE PLAN

The University currently occupies 2.8 million gross square feet of building space but is 400,000 square feet short of its space need, as defined by the Texas Higher Education Coordinating Board. The addition of new faculty, staff, and students will require construction of an additional 1.6 million square feet of new space, as well as supporting infrastructure and renovation of existing space, as detailed in **Appendix A**.

The building plan requires a capital investment of \$800 million in today's dollars to accommodate planned growth (Appendix A). Capital projects are typically bonded with a 20-year payback on the borrowed money. Bonds repaid by the State of Texas or UT System PUF do not require a separate annual budget by UT Dallas, but those repaid by UT Dallas do require annual budgeting. Typically, the annual payment is about 7% of the loan amount.

The planned sources of funds for the building program are:

1. \$554 million from a combination of: the State of Texas, the UT System Permanent University Fund (PUF), and private sources. Tentatively, \$156 million is planned from the State (2 capital projects over the next 10 years), \$338 million from the UT System, and \$60 million from private donors.
2. \$173 million of building debt service from UT Dallas income streams related to housing rent, student fees, food service income, and other service income.
3. \$68 million of building debt service paid from the UT Dallas operating budget (maximum of \$5 million per year).
4. \$5 million for renovation paid by gifts.

Neither the State nor the UT System can authorize any of these future projects at this time. Limits on maximum allowable debt may restrict the rate of building, although this limitation is not certain at this time.

Investments in new information technology infrastructure will be necessary and will eventually cost an additional \$4 million per year. To summarize:

Additional Costs: Recurring costs for building debt of \$5 million per year, and annual cost for information technology ultimately increasing by \$4 million per year.

Responsible Persons: Vice President for Business Affairs (buildings and most infrastructure) and Vice President and Chief Information Officer (information technology).

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FINANCIAL PLAN

In planning for growth, there will be a steady increase in number of faculty, amount of research, private giving, and number of students. In terms of the UT Dallas budget, the new annual operating expenses are projected as follows (in today's dollars) for the year 2016:

- The 6 strategic initiatives: \$6 million per year
- The 8 strategic imperatives: \$111 million per year
- Building and infrastructure costs: \$5 million per year
- Information technology costs: \$4 million per year
- **Total annual costs: \$126 million per year**

Sources of new annual revenue (in today's dollars) projected for 2016 are as follows:

- State funds, tuition, and fees from 5,000+ new students: \$82 million per year²
- Indirect cost recovery (ICR) from increased research: \$18 million per year³
- Recovery of graduate student tuition from research grants: \$3 million per year⁴
- Increased executive education programs: \$2 million per year
- Income from land leases: \$2 million per year
- State appropriations that reward increased research: \$10 million per year⁵
- State appropriations for new exceptional items: \$5 million per year⁶
- Faculty start-up funding from UT System: \$3 million per year⁷
- Intellectual property licensing income: \$2 million per year
- UT System support for Library and Equipment: \$2 million per year
- **Total new annual income: \$129 million per year**

Table 5 summarizes some of the key parameters discussed in the plan, including financial parameters. Table 6 summarizes the total additional cost over a 10 year period, which is \$1.9 billion.

A financial plan projecting forward 10 years cannot capture the essential details of day-to-day budget control. For example, there must be a linkage between enrollment growth, semester credit hours of instruction, and faculty size. Further, the reward system must recognize excellence, which is not measured exclusively in external research funding, but, rather, is more varied and subtle. The University will develop additional incentives that are driven by the ultimate goal: a top quality university.

² Assumes 5,446 new students at \$15,100 per student per year (state appropriations, tuition, and fees)

³ Assumes \$60 million of new annual research income and slightly higher overhead rate.

⁴ Assumes recovery of \$8,000 of tuition/fees per year for 375 graduate students

⁵ Based on pending legislation that appropriates \$1 million per \$10 million of research

⁶ Assumes that over the next 10 years UT Dallas will receive new special appropriations from the legislature

⁷ Based on current programs, such as STARS, for which there is no guarantee of future support.

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Table 5. Summary of Key Parameters and Financial Information.

Item	Current Value	Increase	Value in 10 Yrs	Cost	Cost Allocation			
					UT Dallas	State	UT System	Private
Faculty	382	+228	610	\$80 M/yr	\$77 M/yr		\$3 M/yr	\$95 M
Research Staff	5	+25	30	\$1 M/yr	\$1 M/yr			
Total Undergraduates	9,440	+3,303	12,743	\$11.8 M/yr	\$11.8 M/yr			\$40 M
Total Grad. Students	5,083	+3,303	8,386	\$3.7 M/yr	\$3.7 M/yr			\$50 M
Total Students	14,523		21,129					
FTE Undergraduates	7,006	+2,723	9,729					
FTE Grad. Students	3,772	+2,723	6,495					
Total FTE Students	10,778	+5,446	16,224					
External Research	\$40 M/yr	+\$60 M/yr	\$100 M/yr	\$11.7 M/yr	\$11.7 M/yr			\$30 M
Strategic Initiatives:								
1 . Tomorrow Inventions				\$1.2 M/yr	\$1.2 M/yr			\$20 M
2 . Preparing Students				\$0.7 M/yr	\$0.7 M/yr			
3 . Managing Change				\$0.8 M/yr	\$0.8 M/yr			\$10 M
4 . Securing Safety				\$0.4 M/yr	\$0.4 M/yr			\$5 M
5 . Improving Health				\$1.4 M/yr	\$1.4 M/yr			\$20 M
6 . Great City				\$1.5 M/yr	\$1.5 M/yr			\$10 M
Tell Story Better				\$2 M/yr	\$2 M/yr			
Expand Fund Raising				\$1.6 M/yr	\$1.6 M/yr			
Endowment	\$250 M	+\$290 M	\$540 M					
Improve Graduation Rates	4 yr: 32%	+15%	4 yr: 47%	\$0.2 M/yr	\$0.2 M/yr			
Buildings	2.8 M sq ft	+1.6 M sq ft	4.4 M sq ft	\$800 M	\$241 M	\$156 M	\$338 M	\$60 M
Campus Enhancement								\$20 M
Information Technology				\$4 M/yr	\$4 M/yr			
School Endowments	1 School	+ 3 Schools	4 Schools					\$90 M

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Table 6. Total Cost for Strategic Plan Implementation over Next Ten Years.

Cost Item	Total Cost over 10 Years
Annual Operations: Implement 6 Strategic Initiatives	\$30 million
Annual Operations: Implement 8 Strategic Imperatives, Including Increasing Faculty Size and Number of Students	\$555 million
Annual Operations: Information Technology	\$20 million
New Buildings and Infrastructure	\$800 million*
Private Fund Raising: Used Immediately	\$150 million
Private Fund Raising: Endowment	\$300 million
TOTAL	\$1.9 billion

* Full cost (rather than 10 years of debt service) shown for new buildings.

Measuring Progress and Defining Success

The measures of progress that will be tracked are listed in Table 7, along with goals for 3, 6, and 10 years. Metrics have been selected that are critical to the success of this plan (e.g., growth in faculty, students, research, and endowment). Others, such as number of faculty elected to the National Academies, SAT score of entering freshmen, and alumni giving rate were selected in part because they are used in national rankings of universities.

The goals of this Strategic Plan and metrics for measuring success are aligned with the University of Texas System Strategic Plan.

Not all progress can be measured quantitatively. For example, the reputation of the University is very important in attracting top talent, but reputation is established in a number of ways, many qualitative.

Top Priorities for the Next Three Years

Of the many actions to be taken, some are more critical than others because they lay the foundation for other successes. Table 8 summarizes the top priorities for the next three years. The priorities are:

- Private fund raising
- Approval and funding of new buildings
- Expansion of student enrollment
- Hiring outstanding faculty members.

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Table 7. Measures of Progress

Parameter	Current	Goal (3 Yrs)	Goal (6 Yrs)	Goal (10 Yrs)
Tenure/Tenure Track Faculty	382	456	525	610
Research Staff	5	11	21	30
Total Students	14,553	15,828	18,011	21,129
FTE Students	10,778	12,029	13,868	16,226
Research Expenditures	\$42 M	\$55 M	\$74 M	\$100 M
Ph.D.'s Awarded Annually	100	164	224	300
New Space Added (M sq. ft.)	2.8	3.3	3.9	4.4
Endowment	\$250 M	\$310 M	\$410 M	\$550 M
4-Year Graduation Rate	32%	36%	42%	47%
Freshman Retention Rate	80%	83%	85%	88%
Faculty in National Academies	2	4	6	10
SAT of Entering Freshmen	1250	1250	1250	1250
% Freshmen in Top 10% of Graduating Class	42	44	46	50
Alumni Giving (Participation)	2%	4%	7%	11%

Table 8. Top Priorities for the Next Three Years.

Year	Priority	Reason for Priority
2007	Private fund raising, Project Emmitt	A key project that must be successful
2007	Approval for major building projects	Building program must progress
2007	Initiate new degree programs	Essential for expanding enrollment
2008	Private fund raising, Project Emmitt	A key project that must be successful
2008	Expand enrollment	Essential for growth
2008	Approval for major building projects	Building program must maintain momentum
2008	Faculty hiring	Demonstrate ability to hire at highest level
2009	Private fund raising	Launch comprehensive capital campaign
2009	Expand enrollment	Essential for growth
2008	Approval for major building projects	Building program must sustain momentum
2009	Faculty hiring & research success	Demonstrate ability to recruit and deliver research results

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The University's ability to succeed on all the critical elements is proven. The University has increased its student enrollment by 65% in the past 10 years. In the past 12 months alone, the State and UT System have committed \$130 million toward new building projects at UT Dallas. UT Dallas has proven its ability to attract support from the private sector, for example, as evidenced by the \$30 million gift that created the Eugene McDermott Scholars Program and its already substantial \$230 million endowment. Finally, the University has demonstrated an ability to recruit top-quality people at all levels in the past several years.

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Appendix A – Building Plan

The University currently has 2.8 million gross square feet of building space, including 1.5 million square feet of academic and research space and 485,000 square feet of student housing space. About 100,000 gross square feet of existing space is unassigned and reserved for future faculty hires in the newly completed Natural Science and Engineering Research Laboratory and in the Frances and Mildred Goad Building, which houses the Center for BrainHealth.

Building Additions in Progress

Four new building projects have been approved and are in the design phase:

1. Service and maintenance compound (40,000 square feet);
2. Math, Science, and Engineering Teaching-Learning Center (70,000 square feet);
3. Student residential housing addition (126,000 square feet); and
4. Campus dining hall (20,000 square feet).

A major renovation project for Founders Building (160,000 gross square feet) will begin in late 2007 or early 2008, and will create significant new instructional and classroom space.

A new student services building (70,000 gross square feet), which would be funded by a new student fee, has been proposed. If approved, student services currently located in the McDermott Library will be moved out of the Library, eliminating need for Library expansion over the next 10 years, and taking pressure off space needs in other buildings, as well.

Need for New Space

For planning, it is assumed that each new faculty position will require 3,500 square feet of academic and research space, a number that is 13% below the current average of 4,000 square feet per faculty member, to reflect efficiencies and economies of scale⁸. The space requirement for 228 new faculty positions is $228 \times 3,500 = 798,000$ square feet. As indicated earlier, about 100,000 square feet of just-completed space is available for new faculty, reducing the future space need for new faculty to 698,000 gross square feet.

In addition to the new faculty positions, many replacement faculty members will require more space than the people being replaced, because of the added emphasis on research. About 70 research-active faculty replacements will require an additional 1,000 square feet each, for a total of 70,000 square feet of new space.

The planned 25 new professional research staff will each require about 3,500 square feet of new space, creating a need for 87,000 square feet of new space.

Thus, the total new academic and research building space need is $698,000 + 70,000 + 87,000 = \mathbf{855,000 \text{ square feet}}$.

⁸ Economies are realized because little additional administrative infrastructure is needed, research space is designed for shared use, and growth builds on existing programs (rather than creating entirely new schools or program areas).

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The addition of 5,000 new students generates need for 125,000 square feet of new classroom space. This space need will be met by new or renovated space already in the design phase, by classroom space incorporated in new academic and research buildings, and by future renovations that will convert space currently used as conference and general meeting space to additional classroom space.

Currently, about 25% of the University's 10,000 FTE students live on campus. With 5,000 new FTE students, keeping this same ratio, the University will need new housing for 1,250 students, and probably more, given the current demand for residential housing.

The University will also need new infrastructure and an events-conference center. A small but inadequate existing conference center is used for many purposes, including student orientation events, special lectures, and performing arts. The existing Activities Center currently serves as the basketball facility, special events center, and the University's facility for graduation ceremonies, but is of inadequate size for graduation ceremonies (it is no longer large enough to accommodate the graduation ceremony for the University's largest school, requiring the University to split graduation over multiple ceremonies and days, and limit the number of tickets per family). Because 50% of UT Dallas' baccalaureate degrees are awarded to first-generation college graduates, family participation in graduation ceremonies is highly desirable among our constituencies. The new facility would double as a conference facility with an auditorium holding about 800 people and smaller breakout rooms, an arena area with seating for 6,000, and a large open area suitable for receptions or large luncheons for students and families. The existing Conference Center would be renovated and converted to academic use for classrooms.

Building Plan

The building construction plan for new research and academic space is shown in Table A-1. All estimated costs are in today's (2007) dollars and will increase over time with inflation, as will income to the University.

Table A-1. Plan for New Academic and Research Support Space.

Building	Square Feet	Cost (\$ M)	When Needed?	When Authorized?
Arts and Technology	100,000	63	2010	2007
Engineering	200,000	130	2011	2008
Science	180,000	90	2012	2009
School of Management Expansion	80,000	26	2013	2010
Science and Engineering #1	150,000	80	2014	2010
Science and Engineering #2	145,000	80	2015	2011
ACADEMIC & RESEARCH	855,000	\$469		

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Historically, the State of Texas has funded major building projects about every 4 years. Over a 10 year period, perhaps 2 of the 6 buildings in Table A-1 would be funded by the State. A reasonable assumption for planning purposes, based on this 2/6 ratio, is that State funds might cover one-third of the \$469 million cost in Table A-1, or \$156 million. Private fund raising totaling \$60 million is planned to reduce some of these costs.

The new buildings will have significant operating and maintenance cost. However, this cost is built into the “overhead” component of the \$315,000 of annual expenditures per faculty member. The operating cost will increase over time, but income should increase proportionally.

Funding for a new building must be authorized 3 to 4 years before the building comes on line. The last column in Table A-1 shows when the project would have to be authorized in order to meet the schedule for completion.

The construction schedule indicated in Table A-1 is linked to the pace of new faculty hires. Table A-2 provides a year-by-year breakdown of the space need. Figure A-1 (next page) shows graphically the space need as it accrues with new faculty hiring.

Table A-2. Year-by-Year Breakdown of the Academic and Research Building Plan.

Year	Time	Number of Faculty	Annual New Space Need (sq ft)	Cumulative Space Need (Sq ft)	Available Space for New Faculty (sq ft)	Comments on New Space
0	2006	382	0	0	100,000	Recently opened buildings
1	2007	406	99,700	99,700	100,000	
2	2008	431	103,200	202,900	100,000	
3	2009	456	103,200	306,100	100,000	
4	2010	480	99,700	405,800	200,000	100,000 sq ft for new arts and technology building
5	2011	500	85,700	491,500	400,000	200,000 sq ft for new engineering building
6	2012	525	103,200	594,700	580,000	180,000 sq ft for new science building
7	2013	549	99,700	694,400	660,000	80,000 sq ft for expansion to School of Management
8	2014	570	89,200	783,600	810,000	150,000 sq ft for new science and engineering building #1
9	2015	591	89,200	872,800	955,000	145,000 sq ft for new science and engineering building #2
10	2016	610	82,200	955,000	955,000	

The University will need infrastructure improvements, as summarized in Table A-3. As stated above, the University will have growing needs for other buildings, including a new student services building, an events/conference center, a campus dining hall, new housing, and expanded student recreational facilities, as shown in Table A-4.

Figure A-1. Space Needs for Academic and Research Space Compared with Plan to Construct New Space over the Next 10 Years.

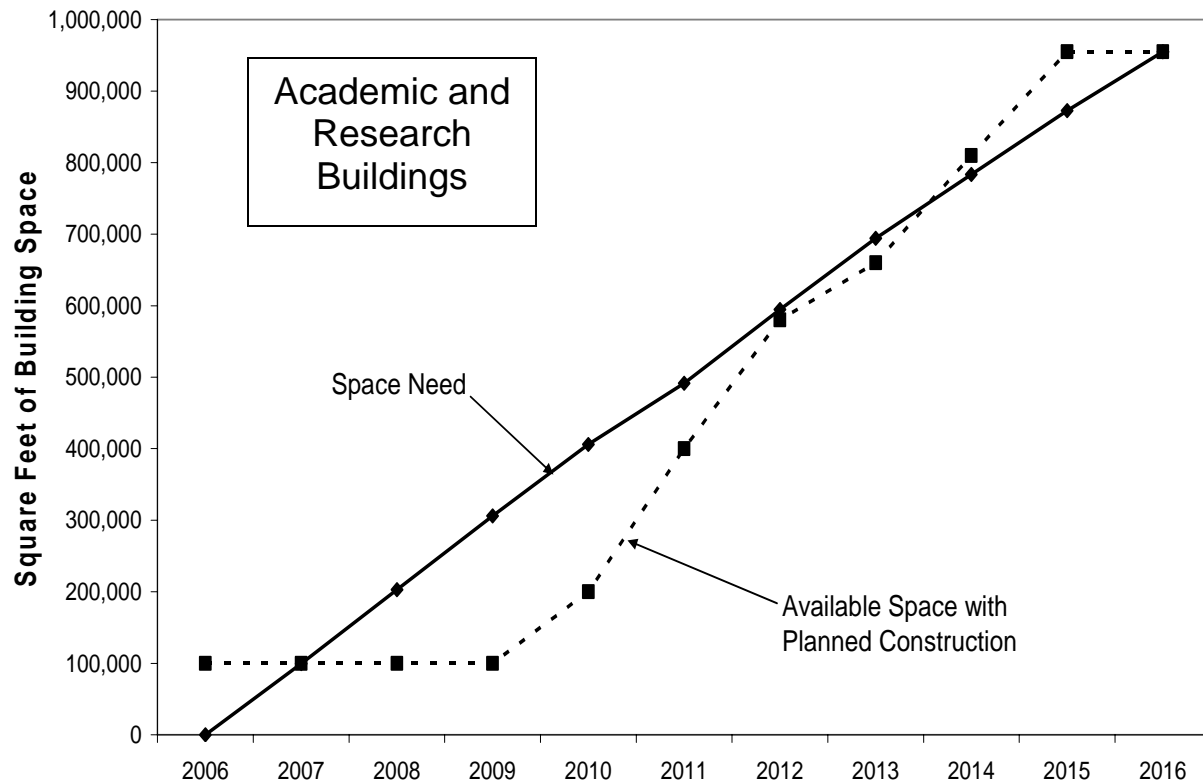


Table A-3. Plan for Infrastructure Improvements.

Infrastructure Project	Cost (\$ M)	When Needed	Source of Funding	Description
Vehicular and Pedestrian Safety Improvements	10	2007	UT System PUF	Ring road, access roads, north and south entrance roads, pedestrian pathways
Parking Lots (New and Renovation)	3	2008	Parking Fees	New parking lots; upgrades to existing lots
Electrical System Upgrades	3	2008	UT System PUF	Necessary upgrades identified from recent study
New Energy Plant	25	2010	UT System PUF	New energy plant needed
Parking Garage	10	2012	Parking Fees	Parking for new buildings
TOTAL	\$51 M			

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Table A-4. Plan for Other New Buildings.

Building	Square Feet	Cost (\$ M)	When Needed	Source of Funding
Housing #1	126,000	25	2009	Rent (project in design)
Food Service	20,000	13	2009	Food Income (project in design)
Student Services	86,000	28	2009	Student fee; fee under consideration by State legislature
Housing #2	126,000	30	2011	Rent
Bookstore	10,000	3	2011	Rent (income from sales)
Recreation Facility	40,000	16	2011	Student fee
Expand Student Union	40,000	15	2012	Student fee
Events & Conference Facility	140,000	49	2013	UT Dallas budget + revenue
Housing #3	126,000	30	2014	Rent
TOTAL	714,000	\$209 M		

The University needs to renovate aging space or space that has been vacated. A summary of these needs is shown in Table A-5 (next page). The total cost is estimated to be \$71 million in today's dollars. This cost is beyond the funding capacity of UT Dallas from its operating budget and can only occur with significant help from the UT System PUF or other external sources.

The Callier Dallas renovation is a special case. The Callier Center for Communication Disorders (Dallas campus) consists of 100,000 gross square feet of space constructed principally in the 1960's on the UT Southwestern Medical Center campus. The Callier Center houses faculty, graduate students, health care and treatment facilities, and a child care facility used for children receiving treatment at Callier as well as children of faculty and staff at UT Southwestern Medical Center. The space could be renovated, but given the lack of any temporary space to conduct operations while the building is being renovated, as well as the age of the building, a more logical step might be to build anew.

A new building slightly farther from the heart of the UT Southwestern Medical Center campus core, closer to the new Frances and Mildred Goad Building that houses the UT Dallas Center for BrainHealth, would be logical. Although options have not been explored, making the existing building available to UT Southwestern might help UT Southwestern meet its critical building needs close to the core of its campus. Further planning is needed to understand whether renovation of the existing building, or construction of a new building, is the better option, but as a placeholder, renovation is shown in Table A-5.

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Table A-5. Renovation Plan.

Renovation Project	Sq. Feet	Cost (\$ M)	When Needed	Source of Funds	Description
Vacated Engineering and Science Space (Engineering, Berkner, Multipurpose, and Founders Annex)	50,000	20	2009	UT System PUF	Transfer of research to new NSERL building vacates old laboratory and research space, which needs to be upgraded for new functions
Goad Building (Center for BrainHealth, 2 nd Floor)	21,000	5	2009	Private	Finish out the 2 nd floor
Callier Dallas	100,000	12	2011	UT Dallas	40 year old building needs renovation
McDermott Library, Basement & Second Floor	100,000	9	2012	UT System PUF	Project to start after Student Services Building completed (functions move out of Library)
Green Hall	132,000	18	2013	UT System PUF	32 year old building needs updating for modern functions
Conference Center	26,000	7	2015	UT Dallas	Convert to instructional space after new conference and events center is opened
TOTAL	429,000	\$71 M			

The overall building and renovation program is summarized in Table A-6, organized by sources of funds and sorted by authorization date within each category.

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Table A-6. Summary of Building and Renovation Plan.

Source	Building or Project	Cost (\$ M)	When Needed	When Authorized
State or UT System PUF or Private	Vehicular & Ped. Safety Improvements	10	2007	2007
	Arts and Technology	63	2010	2007
	Infrastructure (Electrical Upgrade)	3	2008	2007
	Renovation (Vacated Space)	20	2009	2008
	Engineering Building	130	2011	2008
	Infrastructure (Energy Plant)	25	2010	2008
	Science Building	90	2012	2009
	Management Expansion	26	2013	2010
	Renovation (Library)	9	2012	2010
	Science & Engineering Building # 1	80	2014	2011
	Science & Engineering Building # 2	80	2015	2011
	Renovation (Green Hall)	18	2013	2011
	TOTAL: State, UT System, & Private	\$554		
UT Dallas	Housing # 1 (Rent Income)	25	2009	Authorized
	Food Service (Service Income)	13	2009	Authorized
	Parking Lots (Parking Fee Income)	3	2008	2007
	Student Services Building (New Fee)	28	2009	2007
	Parking Garage (Parking Fee)	10	2012	2009
	Housing # 2 (Rent Income)	30	2011	2009
	Bookstore (Rent Income)	3	2011	2009
	Recreation Facility (Fee)	16	2012	2009
	Student Union Expansion (Fee)	15	2012	2009
	Renovation (Callier)	12	2011	2009
	Events and Conf. Center (UTD + Income)	49	2014	2011
	Housing # 3 (Rent Income)	30	2014	2012
	Renovation (Conf. Center conversion)	7	2015	2013
	TOTAL: UT Dallas	\$241		
Private	Goad Building 2 nd Floor Finish	5	2009	
	TOTAL: Private	\$5		
	GRAND TOTAL	\$800		

10 Year Strategic Plan for Intercollegiate Athletics

10 Year Strategic Plan for Intercollegiate Athletics

The following points are selected points of strategic planning for intercollegiate athletics:

Year	Objective	Projected Financial Impact/(Cost)
2007-08	A. Develop, identify and solicit an exclusive campus soft drink sponsorship First Payment year of 10 year contract will be 2008-09 --\$500,000 Athletic Allocation	\$200,000 annually
	B. Identify, cultivate and solicit external funding including major gifts	\$ 85,000
	C. (2007-08 thru 2017-18) Increase student athlete population 3-5% annually	
	D. Research, develop and initiate transition to NCAA Division II	
	1. Prepare exit strategy	
	2. Prepare funding strategy	
	3. Conference affiliation	
	E. Personnel Request:	
	1. Assistant SID	(\$ 30,000)
	2. Administrative Assistant I	(\$ 30,000)
	F. Annual programming to include but not limited to:	
	1. Comet Hall of Honors recognition	
	2. Champs Life Skills	
	3. Student Athlete Advisory Committee	
	G. Summer Athletic Camp Program (2007-2018)	
	1. Projected 9 sport programs will host annual summer camps	\$150,000
	H. Implement feasibility study in agreement with Daktronics Sports Marketing for Advertising sales for scoreboard replacement, addition of message marquee And backlit tables for gymnasium	\$30,000
2008-09	A. Personnel Request	
	1. Assistant Director SWA/Compliance	(\$ 50,000)
	2. Assistant Athletic Director of Development	(\$ 45,000)
	3. Strength and Conditioning Coach	(\$ 45,000)
	B. External Development Goal	\$100,000

	C. <u>Construct field maintenance compound via LHGCL or City of Richardson Partnership</u>	\$300,000
	D. Announce transition to NCAA Division II effective 2011-12	
	E. Athletic Fee Referendum--\$82 Flat Fee for Athletic M&O	\$ 2,485,000 (Est.)
	F. Develop multi-year lease agreement for outside field usage with either Lake Highlands Girls Classic League or City of Richardson with Fifth year enhancement to \$140,000	\$100,000
	G. <u>Completion of Daktronics Sports Marketing endeavor with installation of new Scoreboards, tables and message marquee(s)</u>	\$30,000 annually
2009-10	A. Personnel Request	
	1. Assistant Athletic Director Marketing/Promotions-	(\$ 45,000)
	2. Assistant Athletic Director for Academic Support	(\$ 40,000)
	B. External Development Goal	\$120,000
2010-11	A. Complete transition endeavors to NCAA Division II	
	1. Enhance external funding	\$200,000
	B. Athletic Fee Referendum—Building Fee	\$35,000,000 (Est.)
2011-12	A. (2011-18) Increased external funding annually by 15%	\$138,000
	B. First season of Division II competition (year one of four of probationary period)	
	C. <u>Development of Athletic Building including:</u>	
	1. Academic Center	
	2. Facility Rental and usage agenda including camps/clinics	
2012-13	A. Lead Division II in All-Academic Team recognition	
	B. Enhance equivalency scholarship awards to full limitation	(\$1,581,000)

C. Research, develop and announce plans to start a women's and men's track program
To start competition in 2014-15

D. Complete second year of four year Division II probation

2013-14

A. Enhance the external major gifts; gifts of \$10,000 or more **\$50,000**

B. Research, develop and complete construction on a compliant intercollegiate track **(\$1,250,000)**

C. Complete third year of four year Division II probation

D. Unofficial qualification of 7 sports for Conference post-season competition

E. Lead Division II in All Academic recognition

F. External funding goal enhanced **\$182,500**

2014-15

A. Complete final year of NCAA Division II probation

B. Initiate first year of track program for indoor and outdoor competition

C. External funding goal excluding major gifts projection **\$200,000**

D. First year of enhanced outside field use agreement **\$140,000**

2015-16

A. First year of full membership in NCAA Division II competition

B. Lead affiliated conference in academic and all-conference student athlete recognition

C. Qualify all programs for conference post season competition

D. Lead Division II in All Academic recognition

E. External funding with major gifts projection **\$300,000**

F. Summer camp revenue to exceed total revenue **\$225,000**

- | | | |
|-----------------|--|--|
| 2016-17 | <p>A. Win 3 conference championships</p> <p>B. Total student athlete population to exceed 350</p> <p>C. <u>Research, develop and present plan to initiate an NCAA Division II football program to begin competition in fall 2018</u></p> <p>C. Develop and implement the awarding of a ten year contract for a campus soft drink exclusivity with athletics receiving approximately \$350,000 annually (tbd)</p> <p>D. Annual internal evaluation project of intercollegiate athletics and prepare a ten year strategy including divisional affiliation and expectations</p> | |
| 20017-18 | <p>A. Fifteen sport program sponsoring 375 student athletes</p> <p>B. Win 5 conference championships</p> <p>C. Identify, solicit and solicit 25 major gifts</p> <p>D. <u>Major facility beautification and upgrade initiative</u></p> | <p>\$250,000+</p> <p>(\$300,000)</p> |

Summary

This ten year strategic plan for athletics will be revisited annually to determine success and progress and make the recommended adjustments to successfully complete the proposed goals.

*In January 2008, the NCAA membership will discuss the various proposals and topics regarding Division III – IV and/or a sub-division of Division III. Should the legislative outcome in January 2009 and the American Southwest Conference posture stays solvent, Division III would provide UTD with the athletic challenges and academic reward to remain in a similar structure as currently exists.

*January 2009, the NCAA membership will vote and self-select the desired division membership. This ten year strategic plan is dependent on the direction, philosophy and potential of The University of Texas at Dallas.

The entrance into NCAA Division II provides UTD the option of identifying with “more closely” like institutions on the basis of public, moderate size enrollment. The academic entrance qualifications and academic offerings will identify UTD as one of the most respected and nationally recognized institutions in the nation.

The ability and opportunity to recruit the most qualified and dedicated students in the nation as well as student athletes will compliment the direction and philosophy of The University of Texas at Dallas.

Intercollegiate Athletics:

15 sport programs

375+ quality student athletes

NCAA Division II membership

External development totaling approximately \$850,000 annually