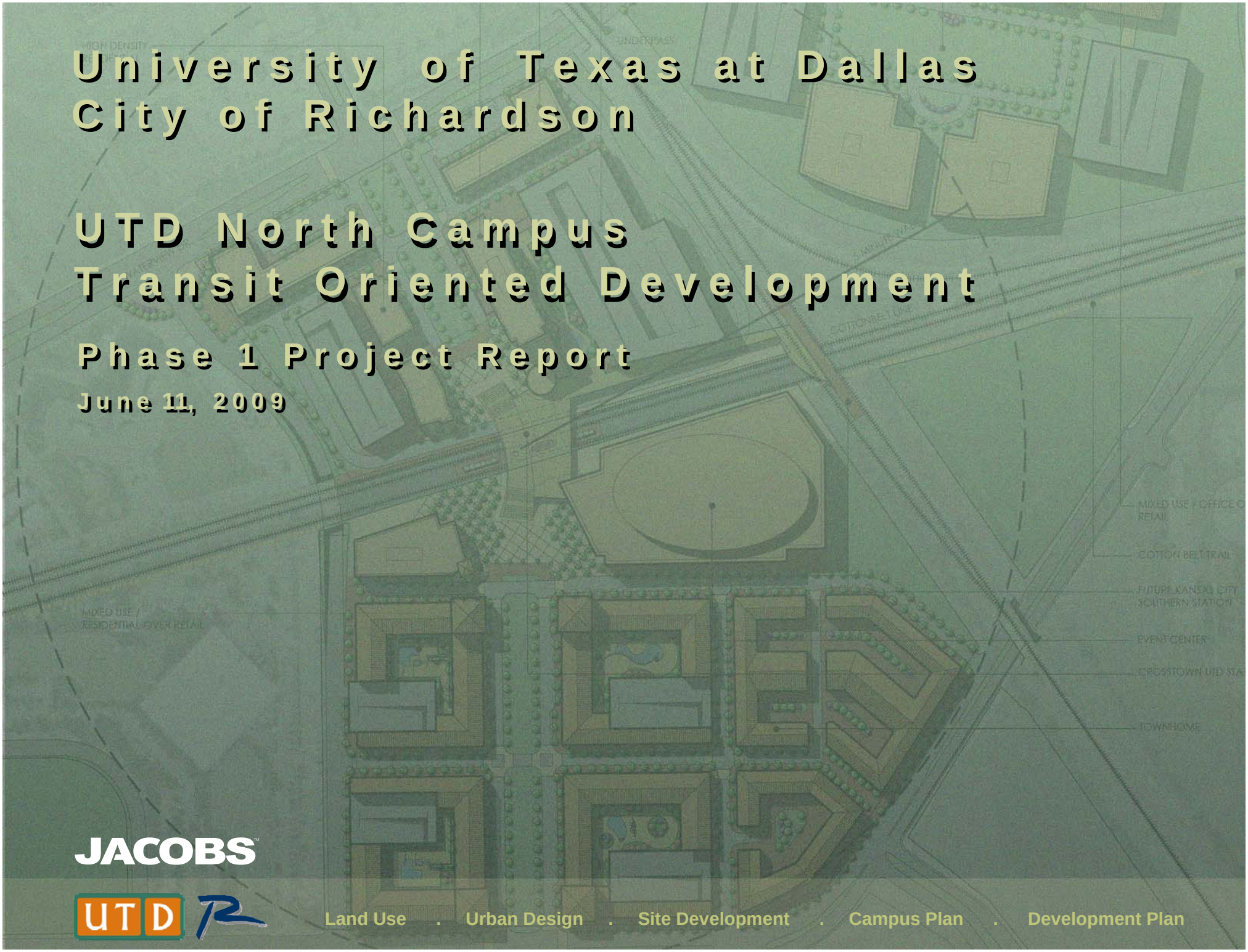
# University of Texas at Dallas
# City of Richardson

# UTD North Campus
# Transit Oriented Development

## Phase 1 Project Report

June 11, 2009




JACOBS

UTD

Land Use . Urban Design . Site Development . Campus Plan . Development Plan

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# Acknowledgments


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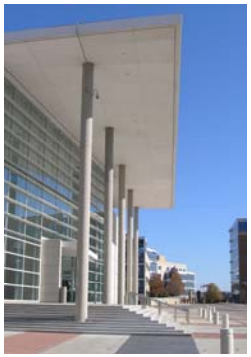


# 1. Project Overview and Objectives

## Project Overview

In the Fall of 2008, the University of Texas at Dallas (UTD), the City of Richardson and Dallas Area Rapid Transit (DART) embarked upon a collaborative effort aimed at creating a new transit-oriented development (TOD) near the proposed UTD DART Station and the University campus.

The planning process will provide the infrastructure and open space framework and building typologies for a new mixed-use transit community designed to; enhance campus life; provide the City, UTD and the region a sustainable development that supports residential growth; promote the goals of the University; and serves as an anchor for new economic development.

The site under study, the UTD North Campus, is located north of the existing academic facilities along the Cotton Belt rail corridor, which is owned by Dallas Area Rapid Transit. Passenger service on the Cotton Belt is included in the DART 2030 system plan and should be available within the next 5 to 10 years; however, as of yet, no specific station locations have been designated. The proposed UTD Station would link the University to DFW Airport and function as the focal point for the new pedestrian-oriented mixed-use environment. Proposed land uses include campus-related residential and retail, office, research and development facilities, an event center, a hotel, and public open spaces. A university-related office/research campus is also planned just outside the primary TOD area.

## Purpose and Need

The purpose of this project is to create a master development plan for the integration of the DART Cotton Belt station into the UTD environment and the Richardson community and to accommodate and promote TOD as an element of the existing campus, planned campus expansion and adjacent private development.

## Stakeholder Objectives

### University of Texas at Dallas

- Become a Tier 1 research facility in the state of Texas and one of the premier universities in the world
- Connect the University to the community, the DFW region, the nation and beyond
- Increase faculty size and student enrollment and expand campus facilities accordingly
- Incorporate a UTD Station into the campus development plan
- Seek return on investment from existing excess land holdings

### City of Richardson

- Promote sustainable economic development
- Establish a UTD Station location as the basis for a vibrant and viable transit-oriented, mixed-use district
- Ensure a proper transition between the proposed development and existing neighborhoods
- Improve the overall City “quality of life”

### DART

- Develop express rail service to DFW Airport
- Determine the optimum station location and the corresponding public infrastructure support requirements
- Accommodate station access and parking needs
- Preserve the option for a future KCS rail station

## Project Planning Issues

### Station Development

- Passenger access to the station, including crossing of the Cotton Belt rail corridor
- Bus access to the station and parking for rail patrons
- Pedestrian linkages to the UTD campus and surrounding neighborhoods
- Public open space

### UTD North Campus

- UTD Station identity
- Existing and proposed street system
- Northern campus gateway and access from Waterview Parkway and President George Bush Turnpike (PGBT)
- Pedestrian linkage to educational facilities, campus housing and future development
- Connections to existing and proposed trails

### Private Sector Development

- Potential land uses and development rights
- Market feasibility of preferred plan
- Public/Private partnership opportunities

### Rail Operations

- Joint use of right-of-way by passenger and freight rail
- Definition of express rail technology, infrastructure and operations
- Grade crossings and quiet zones

### Traffic Circulation

- Cotton Belt grade crossing at Waterview Parkway
- Traffic impacts on adjacent neighborhoods
- Campus circulator routes
- Access to transit parking and shared parking

## Sustainability

This UTD Station Area Plan is consistent with the elements of sustainability as defined by the North Central Texas Council of Governments (NCTCOG) in their Development Excellence program. These ten principals provide a guide for development and energy use in new and infill developments. The sustainable elements include the following:

**Development Options**
Provide a variety and balance of development options and land use types in developments and communities throughout the region.

**Efficient Growth**
Foster redevelopment and infill of areas with existing infrastructure and promote the orderly and efficient provision of new infrastructure.

**Pedestrian Design**
Create more neighborhoods with pedestrian-oriented features, streetscapes, and public spaces.

**Housing Choice**
Sustain and facilitate a range of housing opportunities and choices for residents of multiple age groups and economic levels.

**Activity Centers**
Create mixed use and transit-oriented developments that serve as centers of neighborhood and community activity.

**Environmental Stewardship**
Protect sensitive environmental areas, preserve natural stream corridors, and create developments that minimize impact on natural features.

**Quality Places**
Strengthen community identity through use of compatible, quality architectural and landscape designs and preservation of significant historic structures.

**Transportation Efficiency**
Develop land uses, building sites, and transportation infrastructure that enhance the efficient movement of people, goods, and services.

**Resource Efficiency**
Provide functional, adaptable, and sustainable building and site designs that use water, energy, and material resources effectively and efficiently.

**Implementation**
Adopt plans and ordinances that support Development Excellence and involve citizens and stakeholders in all aspects of the planning process.

## Project Assumptions

The following assumptions were developed from preliminary discussions between the design team, UTD and City of Richardson staff. These assumptions reflect the understanding of the project parameters and establish the basis for the design of the project.

Primary project stakeholders include City of Richardson (City), University of Texas at Dallas (UTD), DART, NCTCOG, Dallas Garland Northeastern Railroad (DGNO) and Kansas City Southern (KCS) Railroad. Secondary stakeholders may include adjacent property owners, neighborhood associations and the community at large.

DART Crosstown passenger operations and stations will be based on express rail criteria as defined in the NCTCOG Mobility 2030 Plan, NCTCOG Regional Rail Corridor Study and DART 2030 System Plan.

Station layout and design will include determination of parking and access needs.

Traffic/Transportation assumptions will be based on the NCTCOG Mobility 2030 Plan and the City of Richardson's Master Transportation Plan. The Master Plan will also incorporate existing and planned hike and bike trails. A market study of the project area has not been performed by the City of Richardson.

The baseline for the UTD campus improvements and expansion will be the 2002 Campus Master Plan, the 2008 Progress Master Plan and the 2030 Master Plan update, currently in development

The project area includes a primary focus on the ¼-mile radius from the DART passenger station, which is also described as a comfortable 1,350 foot pedestrian walk. The plan also includes the development opportunities surrounding this ¼-mile radius that connects to UTD campus development, the Canyon Creek neighborhood and PGBT development.

The project will be developed in two phases.
- Phase 1 will establish the project vision, conceptual land use plan and station locations.
- Phase 2 will further develop private property and campus land uses against a more detailed project program, financial analysis and phasing plan for the project.

# 2. Project Vision

On August 14, 2008, an Executive Steering Committee from the University of Texas at Dallas (UTD) met in a visioning session with key representatives from the City of Richardson and the master planning team from Jacobs to address future development of the campus and the proposed station area. The specific purpose of the meeting was to identify as many planning parameters as possible to set the stage for a master plan of the North Campus area, the land within approximately ¼ mile of the proposed UTD DART Station. Discussions were informal and conducted in an open forum where all participants were encouraged to share their knowledge of historical issues, current operations and future expectations relative to UTD and the surrounding area.

The goal for the day was to capture the group's perceptions of the University's growth in the past and to visualize how the campus should be shaped in the future, particularly with regard to new development north of the existing academic and campus support facilities. The catalyst for the discussions was the desire by both the City and UTD to secure a new transit station on the Cotton Belt rail line as an asset to both the community and the campus and to capitalize on the development potential for the area surrounding this future station.

**The Future:** One of the most important topics of discussion throughout the visioning sessions was the educational environment of the future. This planning process must consider how the campus, its students and its visitors will evolve over the next 20 years.

**Campus Growth:** The University projects a total of 21,000 students and 6,500 faculty members by 2015. This level of enrollment and employment will require 1.6 million square feet of academic space and 2,600 new housing units. The supply of student housing is currently being expanded by 400 units, with an additional 400 units planned for a near-term future phase. In 2007, UTD had research program income of $49 million; the estimate for 2008 is $57 million. The University's goal is to become a Tier 1 research university with $100 million in annual research income in the near future.

**Global Village:** The UTD community is connected to the entire world 24 hours a day through virtual classes, meetings and research projects. Special infrastructure and operations must be maintained in order for this cyber village to survive and thrive over the long term.

**Destination Location:** The campus should become a must-see stop for anyone living or visiting the Metroplex and while UTD may have been perceived as a remote, single-purpose destination in the past, new developments should create an environment that stimulates the senses and invites people to visit the campus, not only for academic pursuits, but for a variety of non-academic activities.

**Private Sector:** The master plan should also respect and support City of Richardson expectations for private sector development of employment uses north of the Cotton Belt.

**Sense of Place:** The plan should seek to develop a character for the campus and surrounding area that is uniquely UTD - an iconic image that reflects the scientific and research orientation of the University.

**Lifestyle Village:** The plan for the North Campus should be to create an environment that will immerse people in a live/work/learn/play lifestyle situated in a mixed-use village. This type of development includes not only a variety of uses integrated into a cohesive district, but also single structures that include residential uses (apartments, lofts, condos, etc.) above ground floor retail/commercial.

**Interaction:** One outcome of this mixed-use style of development will likely be a heightened level of interaction between faculty, staff and students and new links between the University and the community. This higher degree of interaction needs to be nurtured so that it becomes a benefit to everyone involved.

**Outdoor Functions:** Consideration should be given to developing green spaces that are of practical use to students and visitors. At UTD, there is an additional interest in creating outdoor areas that are designed and supported to function as "external centers of excellence", which could accommodate the use of advanced technologies for outdoor classes.

**Northern Gateway:** The University plans to reorient its main entry so that the primary entrance to the campus is from the north. Besides providing a new gateway to the University from PGBT, one of the goals of this relocation should be to redirect traffic to Waterview Parkway, Synergy Park Boulevard and the tollway and to minimize campus-oriented vehicular activity on Floyd Road.

**Grid Street System:** The street system within the TOD must be a functional grid that meets basic market standards for the expected development types and intensities, provides access to existing facilities and transitions smoothly with the operation of the rail corridor. Pedestrian and bicycle pathways will be an important element of the circulation plan, but must be designed as a second layer applied on top of the basic street pattern.

**Activity Nodes:** Automotive and pedestrian circulation spines should be enlivened with activity nodes and small destinations along the way. The rail station itself will be one of the most important activity nodes.

**High-Tech Station:** The improvements and architecture at the rail station should be designed to showcase the technological character and expertise that is embedded in and identified with the UTD culture.

**Housing Options:** Graduate student, faculty and community housing should be available as an integral part of the development and access to the rail system should be promoted as one of its key amenities.

## UTD North Campus

Discussions during the visioning session covered a wide range of options with regard to what types of facilities and amenities might be provided in the new transit-oriented district.

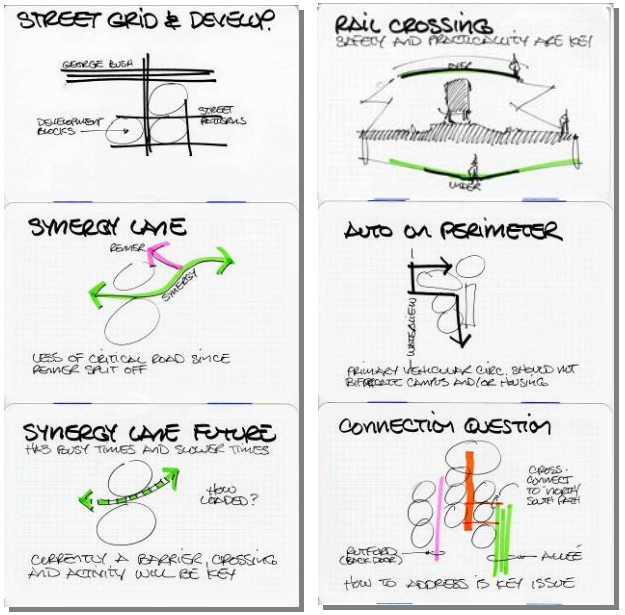
**Housing:** Planning for a variety of residential styles and densities for faculty, staff, students and the general public represents one of the more intriguing options for development. Housing for active senior citizens should not be overlooked as a development opportunity since an environment that offers lifelong learning to active and engaged senior residents could add an interesting dimension to the entire project.

**Retail**: A mix of campus-oriented and mainstream retail and service uses could attract students, faculty, staff, visitors and the surrounding community to the North Campus district. Restaurants, coffee shops, small bookstores, and gift and apparel shops could be market-supported with the right amount of residential and employment density.

**Employment:** Within the North Campus district, there should be opportunities for one or more single-user or multi-tenant office buildings as well as space within the mixed use buildings and live/work units for small office tenants, such as doctors, dentists or insurance agents. The amount of available land in such close proximity to UTD could also provide a location for a world-renowned research park to bolster one of the University's core missions and bring a new facet of economic vitality to the community.

**Incubator:** The lively character and close community ties that grow out of the new development could prove to be a healthy breeding ground for growing local ideas into profitable businesses. Small, generic spaces and live/work units could provide flexible environments for a variety of University-related and independent ventures and investment.

**Spin-Offs:** The University's ever-improving reputation in the fields of science and engineering could lead to partnerships or spin-off academic programs involving the private sector. Local, national or international businesses could benefit from, and provide support to, UTD programs and culture.



**Hotel:** The North Campus area appears to be a strong candidate for a conference hotel which could accommodate the needs of UTD visitors and events and the PGBT office and commercial corridor. A name brand conference hotel could add to the viability of the campus as a destination, support large UTD activities and help sustain the event center.

**Theater:** Moving the University's theater to the North Campus area could strengthen the symbiotic relationship between the existing campus and the new development. A new location would make the theater more accessible to the public and add to the dynamic quality of the new developments.

**Museum:** Creating a new technology museum could help reinforce UTD's reputation as a center of academic excellence, add to the University's cultural portfolio and establish the campus as a destination for the general public.

**Event Center:** Taking the local markets and City of Richardson facilities into consideration, the University is interested in the possibility of building an exciting and technologically superior venue for a wide array of collegiate, local, national and international events.

## The Event Center

One of the more dynamic possibilities discussed during the visioning session was the construction of a large event center which could provide a variety of venues for diverse activities such as:

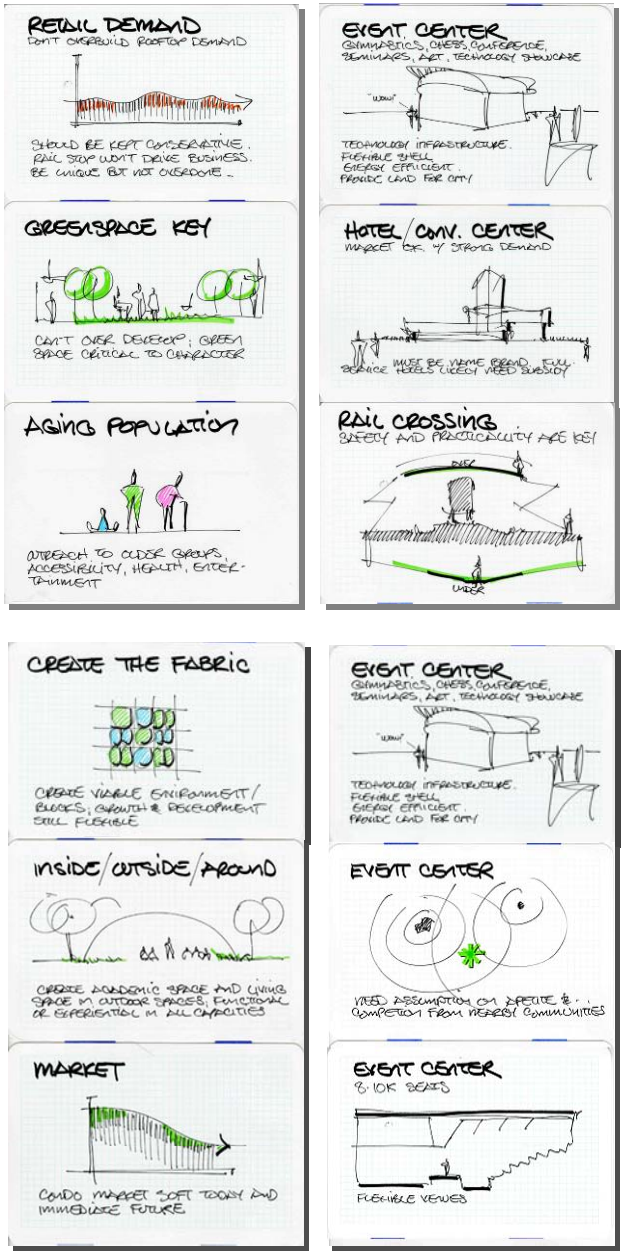
**Tournaments/Championships:** A new event center should be sized and designed to host a wide variety of athletic, academic and culturally popular tournaments and championships, including basketball, gymnastics, tennis, gaming and chess competitions.

**Robotic Events:** The technological character and infrastructure of such a facility would create an ideal location for robotics events—tournaments, exhibitions, conferences—or any number of other technology-oriented activities.

**Seminars and Speaker Series:** The event center should include venues that would be suitable for large or small academic or general interest seminars, lectures or presentations featuring well-known speakers that could be marketed to a broader audience, including the community and University supporters.

**Concerts:** Robust technology and communications infrastructure, along with multiple venues of various sizes, would make this event center an ideal place for performances and recitals of classical, popular, international or alternative music.

**Religious Services:** The event center should be equipped to host a myriad of religious services, including large events which are often difficult for even sizable churches to coordinate and accommodate.



## City of Richardson Perspective

The City of Richardson, as the steward of nearly 29 square miles of land area and almost 100,000 residents, is responsible for taking a comprehensive view of each and every development proposal. This perspective includes consideration of a variety of factors including:

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**Employment:** The City has implemented a zoning strategy that has protected much of the land along major thoroughfares and highway corridors for private development, with an emphasis on employment uses.

**Retail:** Because a rail station alone will not generate enough retail traffic to sustain a concentration of retail business, the City must take care not to plan for more retail than the market can support.

**Housing:** The City of Richardson has acknowledged that higher-density housing may be appropriate at certain locations, but has expressed a preference for most of these units to be located at transit stations.

**Hotel:** The City has historically supported name-brand, full-service hotels and should continue to do so long as they are market-justified and take into consideration the impact of more rooms on the existing hotel market.

**Open Space:** The City should continue to promote the preservation of active and passive recreational space on publically- and privately-owned land. Considerable effort and funding have already been expended in the development of the hike and bike trail that surrounds the UTD campus and connects to other local and regional trails.

**Sustainability:** The City should encourage, and perhaps incentivize, the use of green building techniques and urge developers to apply NCTCOG's Ten Principles of Development Excellence in their projects.

## Visions of the Future: 2030 and Beyond

Advancements in technology, learning pedagogy and materials will all have a major impact on the built form of the environment in the time frame of the project implementation. Since the implementation time frame for the master plan is 10 to 20 years, the design team was challenged to “design for the future” with respect to form, function and technology. The following are vignettes of the future gathered from several resources on future trends that were utilized to advance the thought process of the project.

**Technology**

Growing ubiquity of convergent technologies and widespread use of tele-presence technologies will enable virtual classrooms, and facilitate greater student social networking. (1)

Computers will be integrated into clothing, flexible nanopaper screens, contact lenses or glasses and even human implants. (2)

Proliferation of nanotechnology applications including nano-solar cells will influence building materials and, by extension, design. (1)

Energy costs and congestion will lead to improved technologies and modernization of passenger rail systems. (2)

Nanotechnology based medical therapies will reach clinical use leading to advancement of treatment of numerous diseases. (2)

The development of the space elevator will greatly lower the cost of transporting material into space. (1)

**Energy**

Solar, battery, and water technologies will advance rapidly based on economics of low cost energy solutions. (1)

Waste management and waste to energy programs will be required to reduce depository of waste materials. (2)

Alternative energy sources, including biomass, solar, wind, battery, and water technologies will all advance rapidly. (3)

**Economy**

Widespread automation of service jobs as well as manufacturing will be required in order to accomplish the work needed to support accustomed living standards and a smaller workforce. (2)

Computer competence will be mandatory, raising the level of education required for a productive role in the workforce. (2)

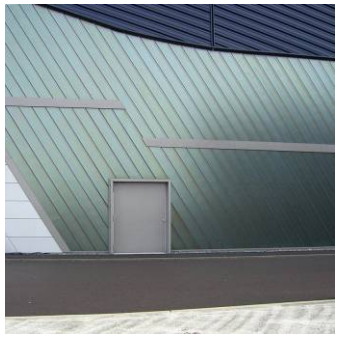
The ability to communicate globally will change governments and democracy as information is more widespread. (3)

Demand for scientist, engineers and technicians cannot be met by the US population opening opportunities for underdeveloped countries. (2)

Information technology will create wealth and a stronger middle class in developing countries. (2)

**Demographics**

The population of the developed nations will fall from 14% of the total world population in 2000 to only 10% by 2050. (2)



Elderly population will grow from 6% of the total population to 17% by 2050 increasing demand for social services and support by the working age population. (2)

The US fertility rates will fall below the replacement level by 2030 but population growth will increase driven by mass migration from developing countries. (2)

**Sustainability**
Higher education institutions will be positioned to be key players/inventors of the sustainable future through research and development of sustainable products and practices. (3)

Advanced solar panels will be utilized as shade structures over parked cars, also collecting rainwater for irrigation and landscape use. (3)

**Education**
Scientists and faculty around the world will solve problems together using “mass collaboration” over a new internet, providing much faster answers to scientific and health problems. (3)

Universities will house mass collaboration studios where secure advanced internet collaboration can occur with scientists and inventors worldwide. (3)

Students will not be satisfied to be fed information to be memorized. Students will work on projects with other students around the world and affect change. (3)

The internet in the future will affect and enhance all pedagogy and scientific research. (3)

Libraries and information systems will be linked through a growing worldwide information database, making education learning-centric instead of teacher- centric, possibly leading to fewer institutions. (3)

Blended environments will become more important, as students seek a sense of physical community that can mesh with their virtual (and virtually ever-present) on-line community. (3)

Demand for scientists, engineers and technicians will continue to grow, opening opportunities for the education of students in underdeveloped countries. (2)

General education will be accessible by internet allowing universities to become more specialized in the information they teach on-line and on campus. (3)

The workforce will become accustomed to an attitude of lifelong learning to stay competitive and up-to-date with technology. (2)

**Sources:**
(1) Glenn Heistra, Futurist.com
(2) World Future Institute – *55 Trends Facing Tomorrow’s World*
(3) Anthony Williams – *Wikinomics & the Future of Higher Education*

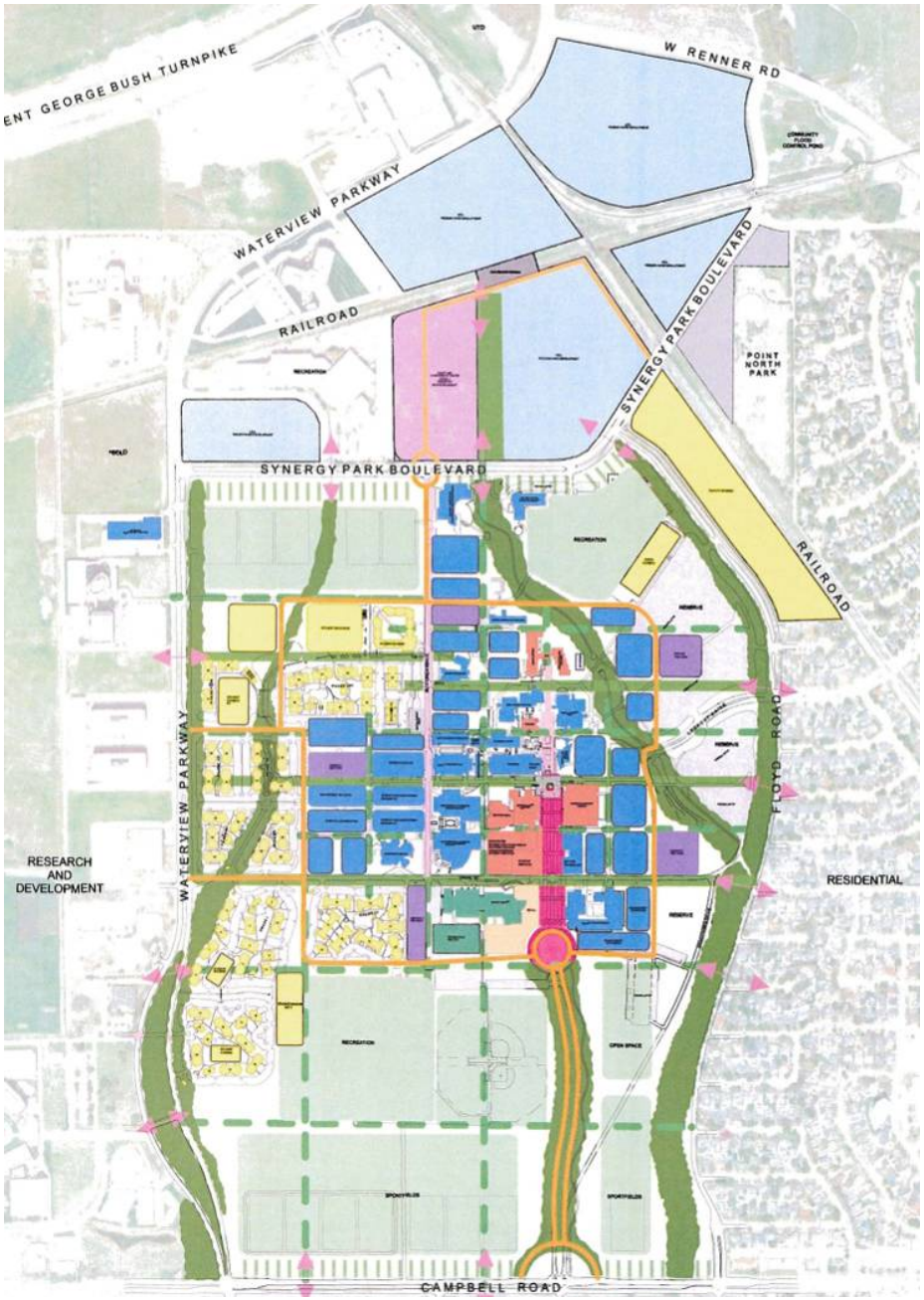
# 3. Opportunities and Constraints Analysis

## Existing Conditions

The study area, located north of Synergy Park Boulevard and south of the President George Bush Tollway, remains largely undeveloped. Surrounding land uses include a planned office campus to the northeast adjacent to PGBT; the Canyon Creek and Cottonwood Creek single-family neighborhoods and Point North Park to the east; the UTD campus to the south; and a mix of multi-story office buildings, senior housing and the Texas A&M agricultural research fields to the west. The site is served by an excellent existing roadway network linking the general study area with adjacent development and the UTD campus.

## Peter Walker Campus Master Plan

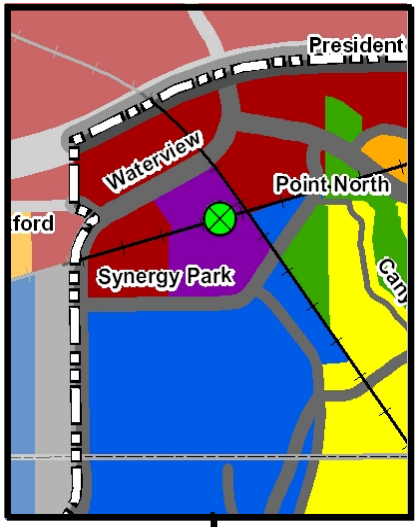
The UTD campus plan, developed by Peter Walker & Associates, focuses on a better organization of pedestrian movement, limited automobile access to the campus core, a proposed loop road network, a new pedestrian spine/mall that will organize future campus building construction, a defined set of campus entry portals and an overall campus beautification treatment. Several of these elements are important as they relate to the development of the North Campus plan and the interface between UTD, the transit station and related development.




2030 Walker Master Plan

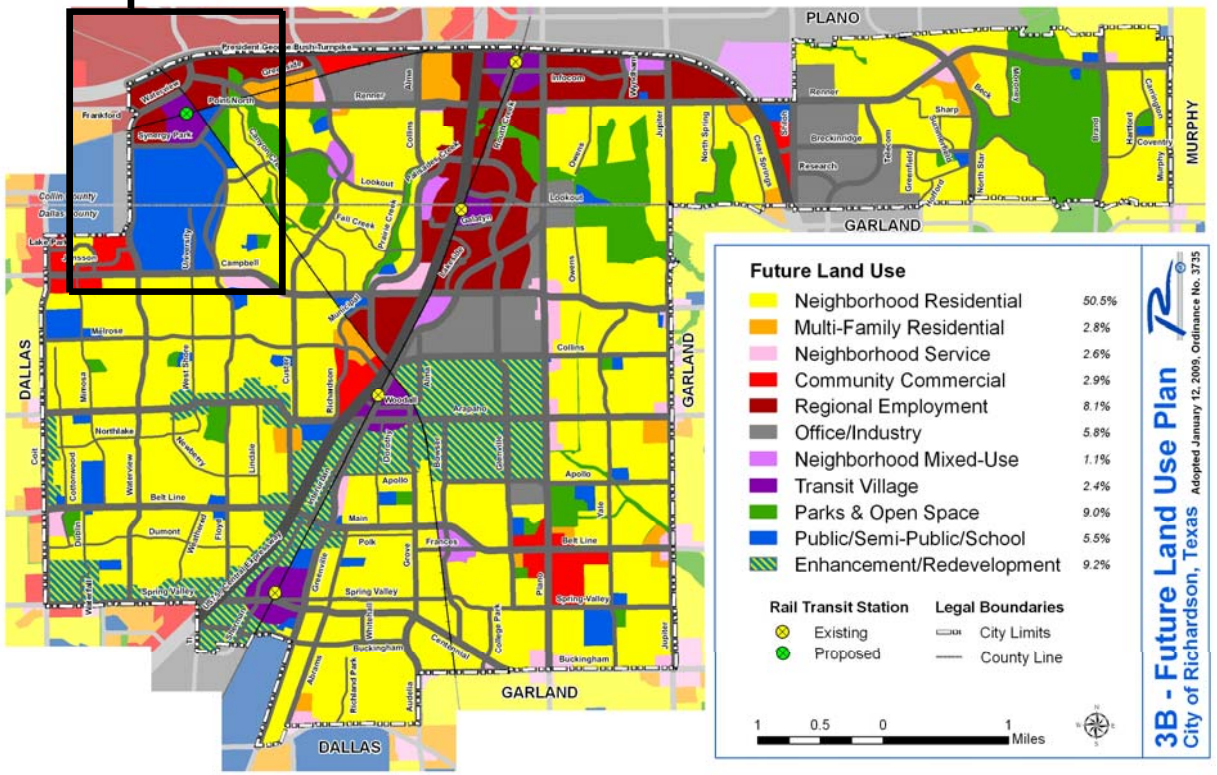
## Existing Land Use

Land uses within the study area fall in three primary categories; office, academic and vacant. The office development is located along Waterview Parkway and is low to medium-density in scale. The academic buildings are south of Synergy and serve a variety of purposes and combine to create a total university setting. The vacant land lies along along the PGBT and Cotton Belt tracks and has significant up-side potential due to its vacant status and excellent access.




## Future Land Use

Much of the area bounded by Synergy Park Boulevard on the south and PGBT on the north is projected to be a regional employment center on the City of Richardson's Future Land Use Plan due to its access to PGBT; however, the Plan designates the area surrounding the proposed UTD Station for Transit Village development. The purpose of this study is to further define the Transit Village concept.

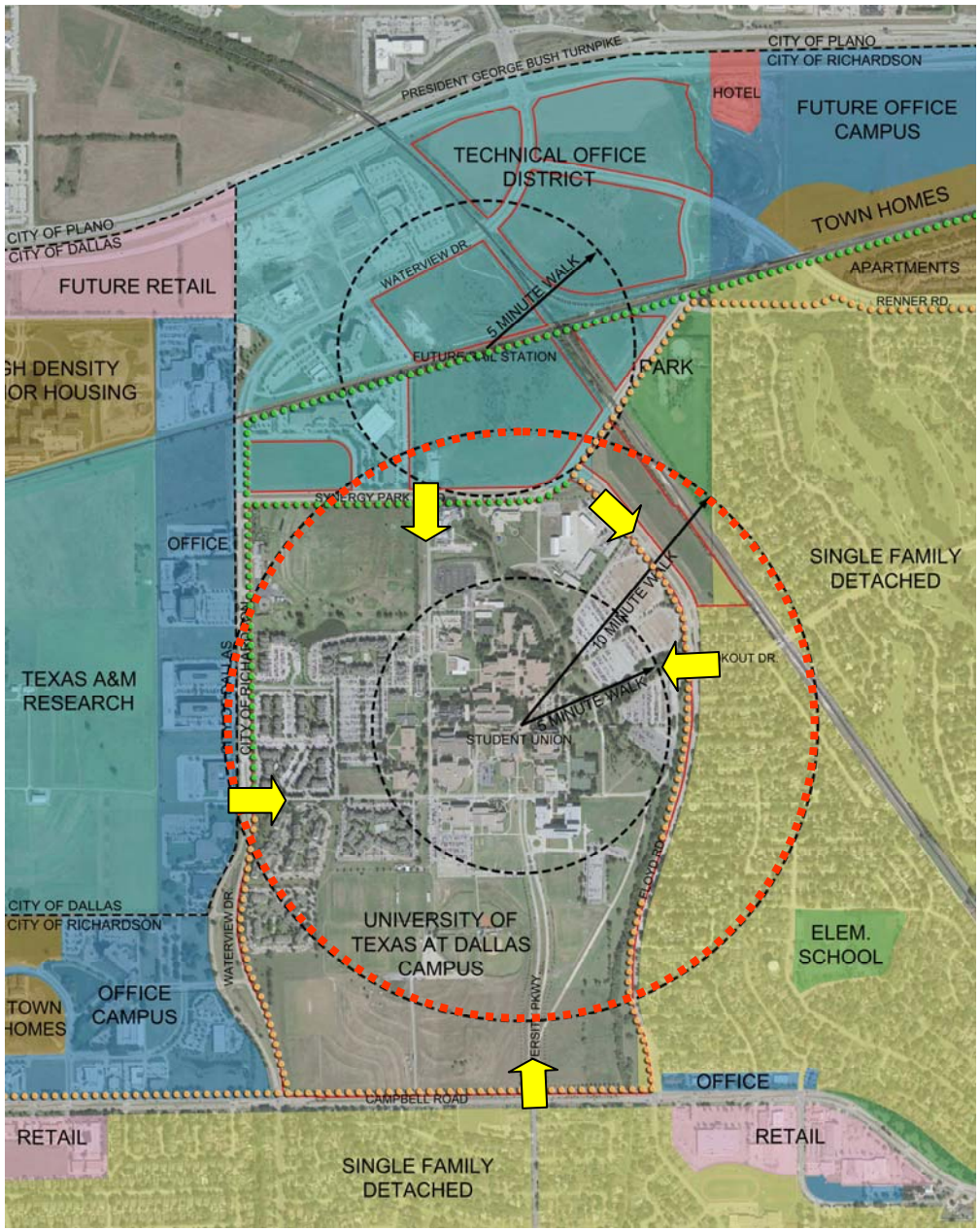



Future Land Use Map

## Existing Campus

To prepare for the anticipated growth of the UTD enrollment and the necessary expansion of the educational and living facilities, the University is completing a new campus master plan and constructing additional student housing. While an increasing number of students live on campus, many other students commute to school on a regular basis. This creates a need not only for traditional campus facilities and services, but also for strong transportation connections for both vehicles and pedestrians.

For planning purposes, a walkable distance from an activity generator, such as a Student Union or the proposed UTD DART Station, is generally defined as a ¼-mile radius, which translates to a 5-minute walk. Typically, denser development occurs near the center of this zone and pedestrians are likely to dominate the circulation system.




10 Minute Walk

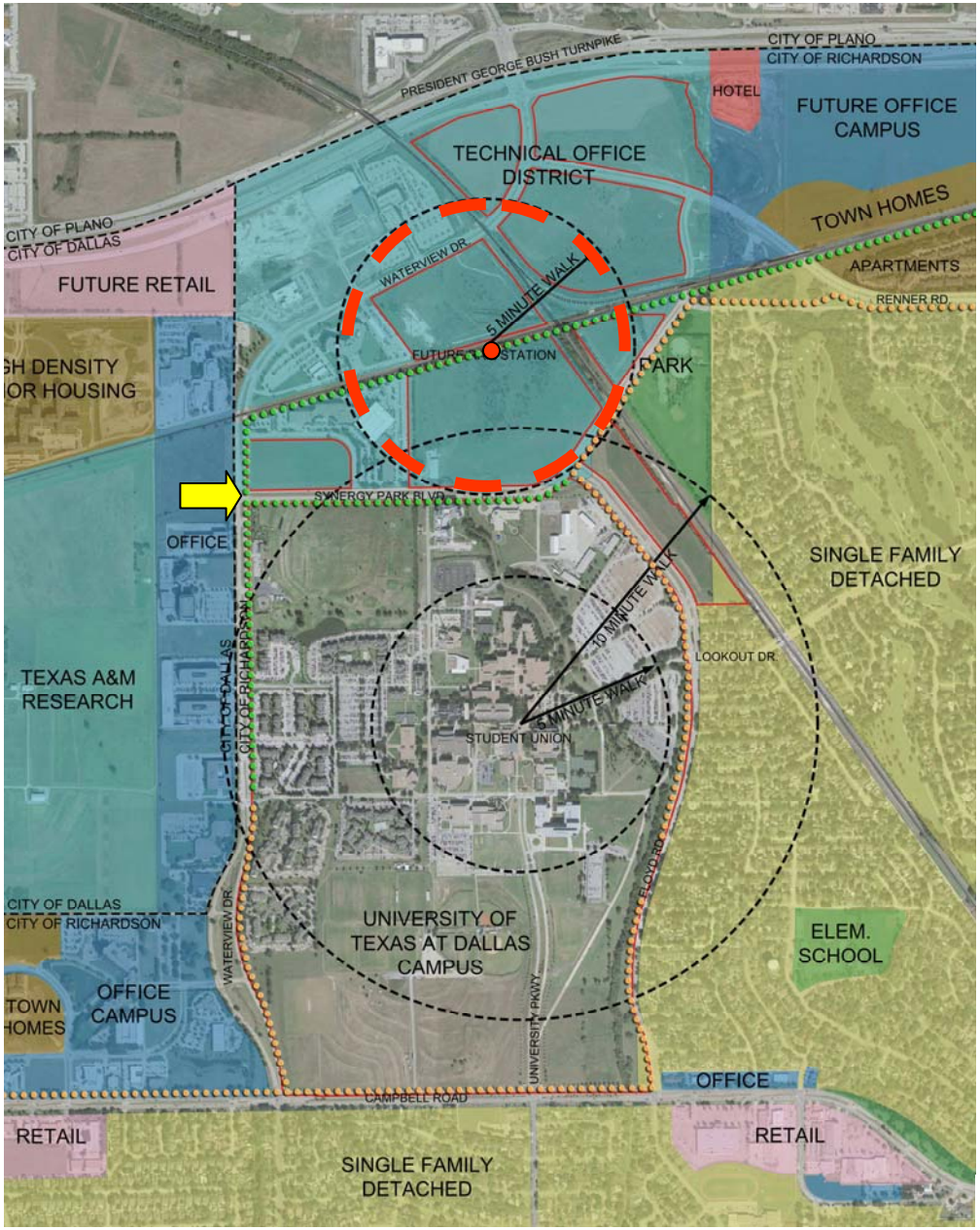
Vehicular Access Points

Trails (existing and future)

## North Campus TOD Area

The proposed North Campus area, owned by the University of Texas system, is largely undeveloped and bisected by two freight lines. The east/west line (the Cotton Belt) is targeted for transit operations and this fact, along with UTD's plans for growth and expansion and the City's vision for employment uses in the nearby area provides the opportunity for a TOD style of development. Presently, there are no specific plans for the KCS line, although the option for a possible station in this vicinity should be preserved through careful planning for the adjacent development.

The proposed North Campus TOD is served by a good system of roadways and trails and will benefit from its proximity to the University, the proposed employment uses along PGBT and adjacent high-quality neighborhoods as well as the increasing demand for transit services from communities in the North Texas region. Since the study area is within the standard ¼-mile walking distance from the proposed UTD Station, the North Campus development should be able to capitalize on all of these conditions in the creation of a successful mixed-use environment.




5 Minute Walk

Vehicular Access Points

Trails (existing and future)

# 4. Transit Oriented Development Framework

Transit can do more than improve accessibility - it is a tool that can encourage economic development, serve as a catalyst for urban renewal, and create a sense of place. Access to transit can support the building of sustainable environments where people can live, work and play. Transit Oriented Development or TOD, is about creating opportunity for business where there is a critical mass of people every day. Capitalizing on these opportunities requires a broad vision that understands the community's strengths and weaknesses and a financial and implementation plan that responds to the community's needs and the likely response of the marketplace.

Transit Oriented Development is an approach to land use and development that relies on design and land use practices typically found in older central cities. These design practices include a mix of land uses (residential, retail, office and public service), a well-connected street grid, a well-defined pedestrian environment and proximity to transit. TOD must utilize the relationship between land use, transit and design elements that support and enhance TOD. For Transit and Transit Oriented Development (TOD) to be successful it must be compatible with the development and growth planned for a community.

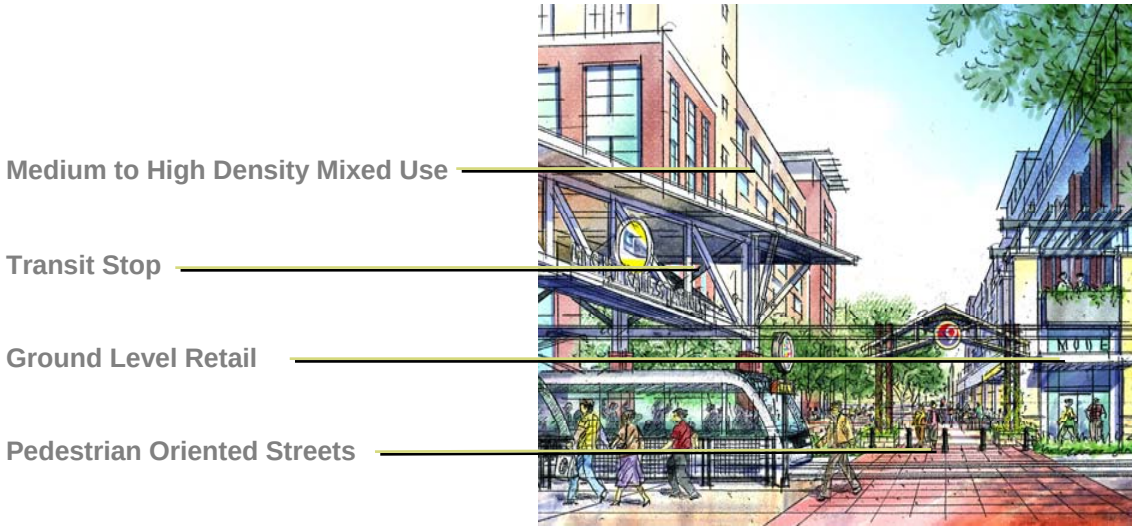
Successful TOD requires interaction between the community and numerous other stakeholders. The transit agency is responsible for the mechanics of rail line planning, station location and pedestrian access to platforms. The city considers issues that encourage transit use and economic development, including zoning, parking abatements and tax incentives. Developers create mixed-use projects near transit stations that capture a receptive market. The community ensures projects work toward their goals for growth as well as reflect the community identity.

The result is that the transit system benefits when residents live or work within walking distance of a station. Developers succeed when transit riders shop in their stores, eat in their restaurants and work in their office buildings. The city benefits when increased property values translate to higher tax revenues, and the community profits from new investment and civic pride.

TOD is the product of a coordinated and participatory transportation and community planning process where transit decisions are made in conjunction with decisions on land use and other transportation investments.

**Principles of TOD**

- Mixture of Land Uses
- New Construction or Redevelopment
- Moderate to High Density
- Design for the Pedestrian
- Destinations within an Easy Walk – ¼ - ½ mile walking radius (5 – 10 minutes)



# 5. Land Use Examples

## North Campus TOD Concepts

During the visioning process, ideal land use typologies were identified for development of the UTD North Campus. These preferred land uses and corresponding building types were identified based on the desire to create a transit oriented mixed-use environment that would be supportive of a university campus. The preferred land uses were evaluated for compatibility with PGBT, transit, the existing academic campus and adjacent neighborhoods. While market factors were considered, a market study will be required at a later date to validate market viability and development phasing.

Building height, massing, parking requirements traffic impacts and other characteristics will determine location and orientation of the preferred land uses and related building types. Examples of the preferred land use types` and related infrastructure are illustrated in the remainder of this section.

### Campus Transit Village Land Uses:

- Residential: Townhome
- Residential: Multifamily
- Mixed Use: Retail and Residential
- Hotel/Hospitality
- Research and Development
- Event Center
- Office
- Parking Garage
- Transit Station
- Open Space/Park
- Public Streets

## Residential: Townhome

- Height from 2 to 4 stories
- Individual access to unit at street
- Strong relationship to street
- Parking at rear of unit

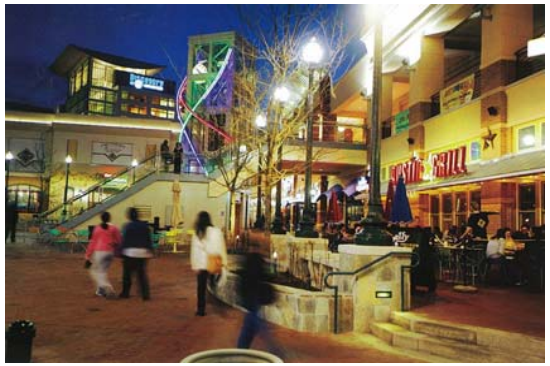
## Residential: Multifamily

- Height from 3 to 7 stories
- Group access to unit at street
- Strong relationship to street
- Parking in garage

## Mixed Use: Retail and Residential

- Height from 4 to 5 stories
- Retail at ground floor level
- Individual access to shops and stores
- Housing above retail
- Strong relationship to street
- Parking in garage





## Hotel/Hospitality

- Multiple stories
- Conference relationship to UTD
- Strong relationship to transit
- Parking in garage (joint use)


## Research and Development

- Multiple stories
- Relationship to Telecom Corridor and UTD
- Parking located in garage

## Event Center

- Strong relationship to UTD (graduation, sports, etc.)
- Equally strong relationship to transit
- Developed in later phases
- Parking in garage (joint-use)

## Office

- Multiple stories
- Relationship to PGBT corridor
- Parking at surface and in garage

## Parking Garage

- Multiple stories
- Enhanced façade treatment
- Preferred ground floor retail
- Joint-use facility

## Transit Station

- At-grade station
- Canopy for protection from elements
- Iconic architectural design feature
- Public space – design opportunity
- Linkage between station, community and development

## Open Space/Park

- Visual/physical linkage between campus and station area
- Form-giving element and focal point within TOD
- Gathering space for students, faculty and staff
- Designed to accommodate multiple functions (active & passive)

## Public Streets

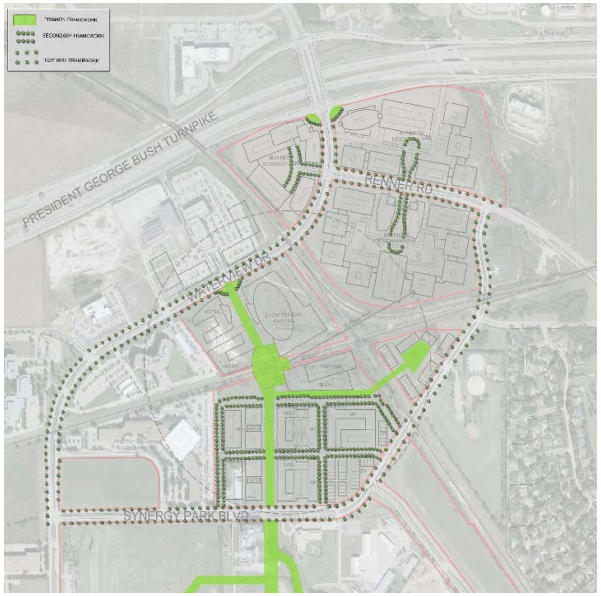
- Pedestrian in scale
- Designed for pedestrians and vehicular traffic
- Strong use of shade for Texas climate
- Equipped with street furniture and pedestrian amenities
- Ground floor retail and/or office
- On-street parking

# 6. Alternatives Analysis

An initial alternatives analysis was conducted to establish various frameworks for TOD land use organization within the UTD North Campus.

Three plans - Urban Block, Open Mall, Village - were initially studied to address vehicular and pedestrian access, linkages and a transportation grid. Corresponding land use concepts were developed based on these framework options. Land uses and building typologies vary between options in an effort to explore alternatives in land use relationships to building form.

- Urban Block Concept




- Mall Concept


- Village Concept

## Urban Block Framework

This design concept is based on an urban street grid (300’ x 400’ blocks) south of the transit corridor, with a pedestrian-scale mall/street running north/south and terminating on either side of the plaza that provides a connection over the transit corridor and access to the station. The street on the north side of the plaza extends eastward then northward to connect back to Waterview Parkway . A passageway could be constructed under the elevated KCS railroad to provide access to development further east.

**Land Use South**

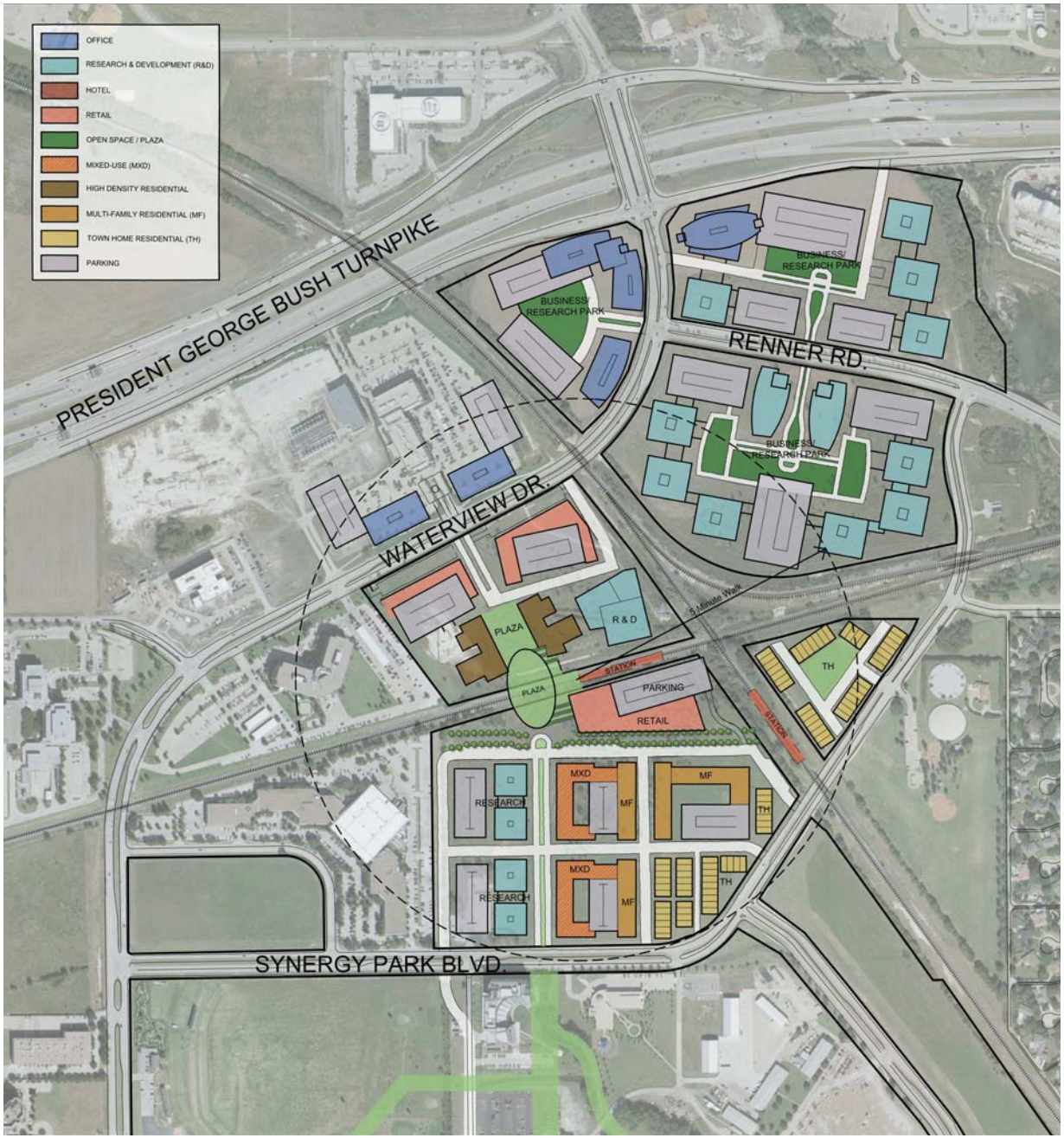
Research and mixed-use with multifamily and lower-level retail along the pedestrian mall/street; townhomes to the east.

**Land Use North**

Higher-density residential, retail and research; office north of Waterview; office/research east of the KCS right-of-way.

**Overview**

- Strong grid street pattern south of the station
- Pedestrian linkage from UTD through the TOD, with provisions for vehicular access and parking
- Multiple residential uses south of the station, including mixed-use buildings
- Employment uses south of the rail corridor
- Research, high density residential and retail north of the rail corridor
- Retail throughout the TOD
- Office/Research development along PGBT



## Open Mall Framework

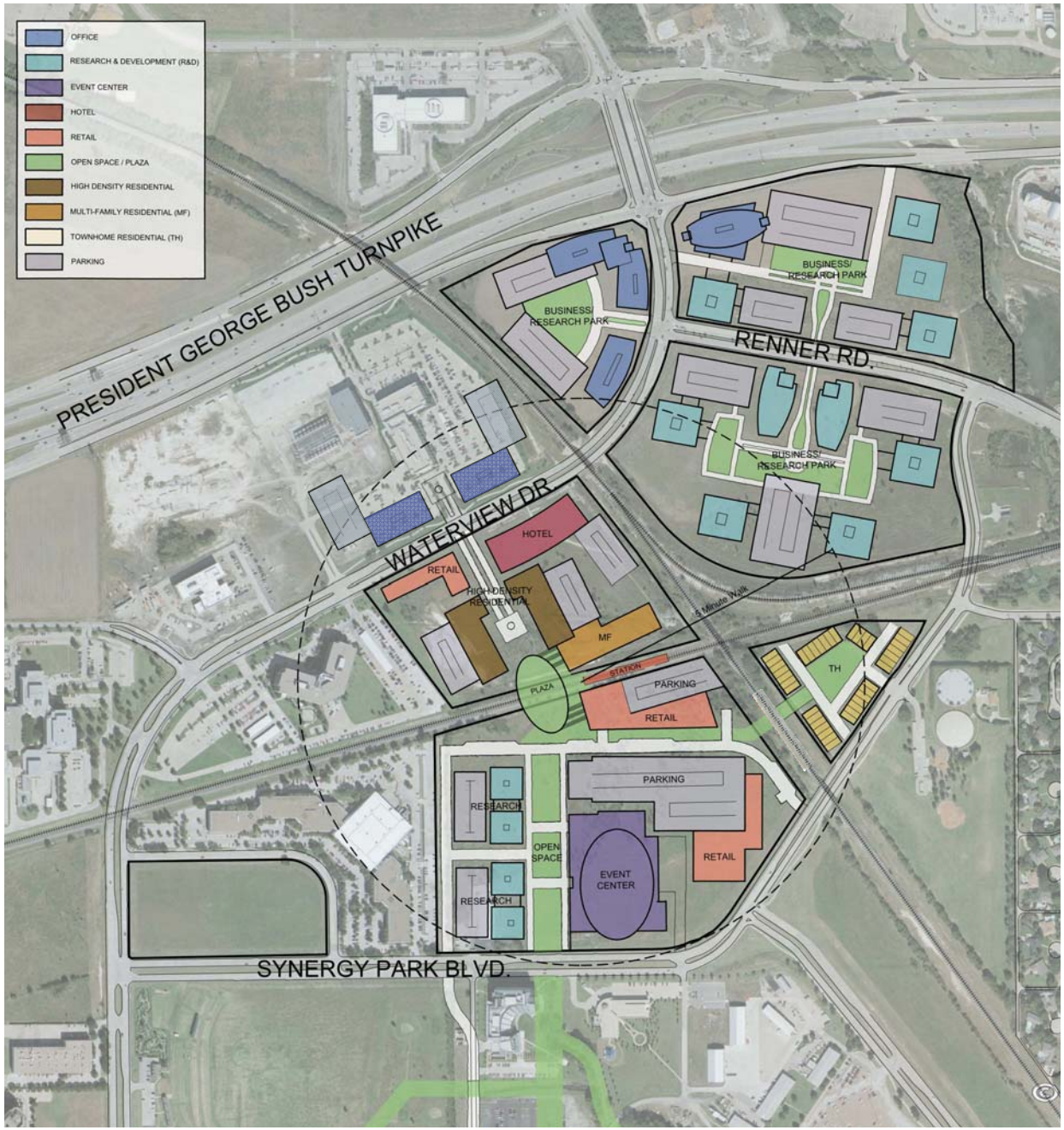
The mall design concept is built around a north/south pedestrian axis, with vehicle accommodations and on-street parking, running from the UTD campus to a station plaza. The plaza provides a connection over the transit corridor and access to the station. A pedestrian street on the north side of the corridor connects to Waterview Parkway. A passageway could be constructed under the elevated KCS corridor to provide access to development further east.

**Land Use South**

Employment and event center uses along the mall; retail near the plaza and event center; joint-use structured parking facility; townhomes to the east.

**Land Use North**

Higher-density residential with hotel and retail; office north of Waterview; research east of the KCS right-of-way.




**Overview**

- Pedestrian mall, with provisions for vehicular access and parking, connecting to the UTD Station
- Employment uses west of the pedestrian mall/street south of the rail corridor
- Campus-oriented event center with adjacent retail
- Structured/Shared-use parking garage south of the station for event center, retail
- Higher-density residential north of the station; townhomes to the east
- Office/Research development along PGBT

## Village Framework

The Village design is based on an informal street loop south of the rail corridor, which provides access to the transit station and frontage for retail. The primary form-giver within the mixed-use village is an informal pedestrian pathway (no provisions for motor vehicles), which is an extension and expansion of the campus greenbelt and a focal point for adjacent retail and restaurant uses. A pedestrian bridge links this central open space with a complimentary plaza north of the transit corridor. A second street loops through the northern portion of the North Campus, connecting to Waterview Parkway and extending east of the KCS right-of-way to link the development there with the TOD. The plan also shows the closing of a portion of Synergy Park Boulevard to further strengthen the linkage between the mixed-use village and the UTD campus.

**Land Use South**

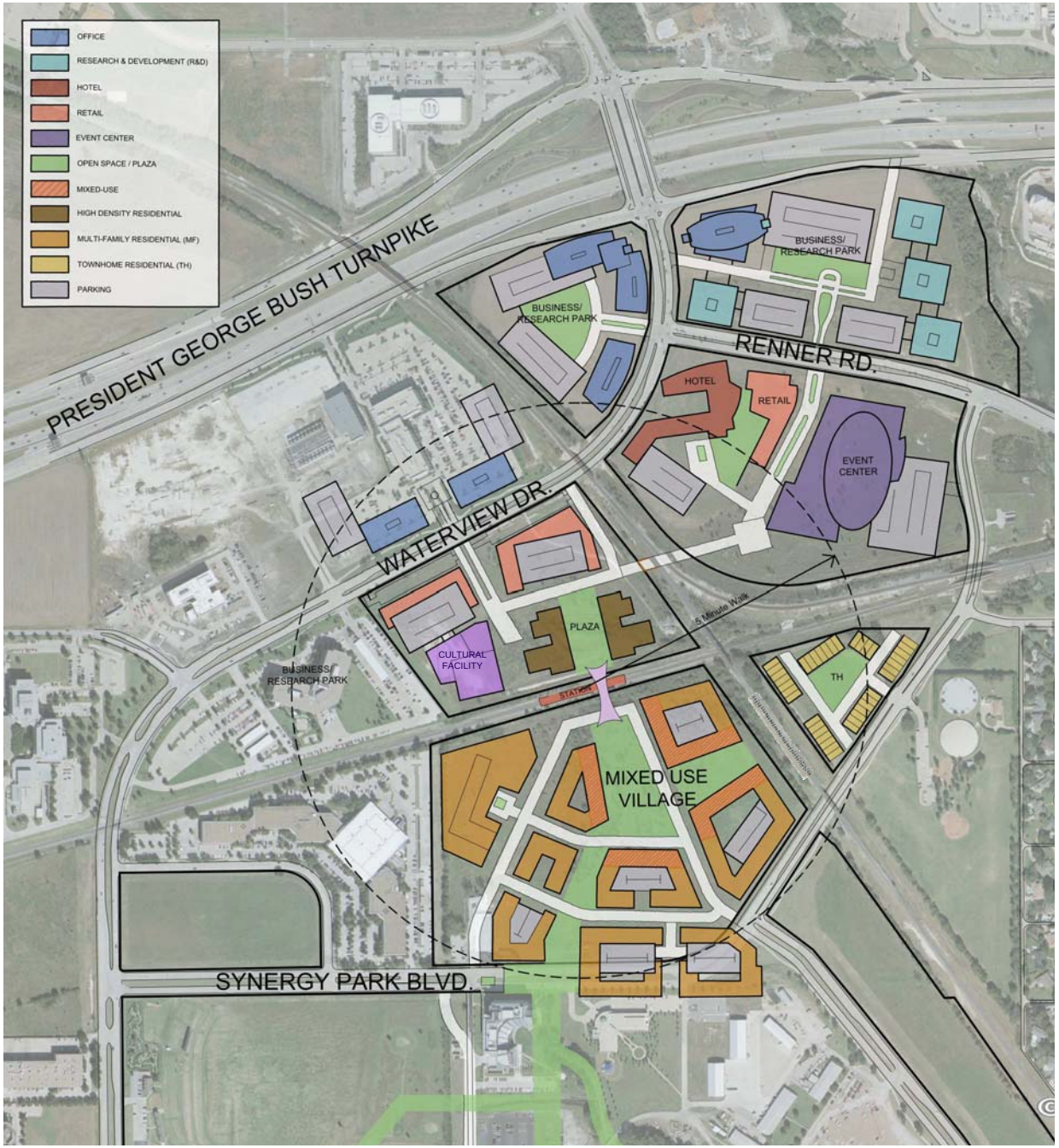
Residential, including apartments and mixed-use buildings with lower-level retail along the pedestrian greenbelt; townhouses to the east.

**Land Use North**

Higher-density residential facing a plaza/open space; possible location for a cultural facility (theater); retail facing Waterview and the secondary loop street; office north of Waterview; research east of the KCS right-of-way.

**Overview**

- Village style development pattern
- Pedestrian-only open space linkage to UTD campus
- Two looping street networks—one north of the rail corridor, one south—and the elimination of a portion of Synergy Park Boulevard
- Multiple residential options throughout the district, including mixed-use buildings
- Event center and hotel at the edge of the transit district northeast of the station

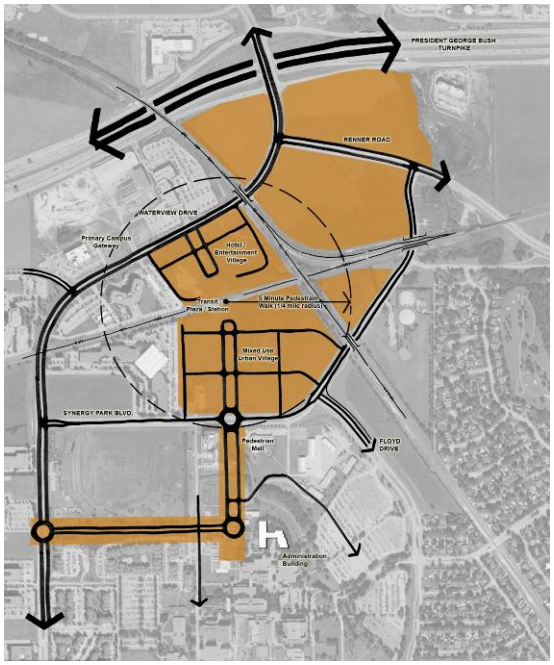


# 7. Campus Access / Gateway Alternatives

The University's desire for a new northern entrance to the campus was an important part of the discussion during the development of the preferred concept. Three alternatives were studied based on the assumption that an additional at-grade crossing of the Cotton Belt tracks would not be permitted.

**West Gateway Option:**
Under this alternative, a new entrance is shown off of Waterview Parkway on the west side of the campus, outside the study area. The primary design impact of this alternative on the North Campus development plan would be its intersection with an extension of the proposed pedestrian mall/street further to the south within the existing campus.

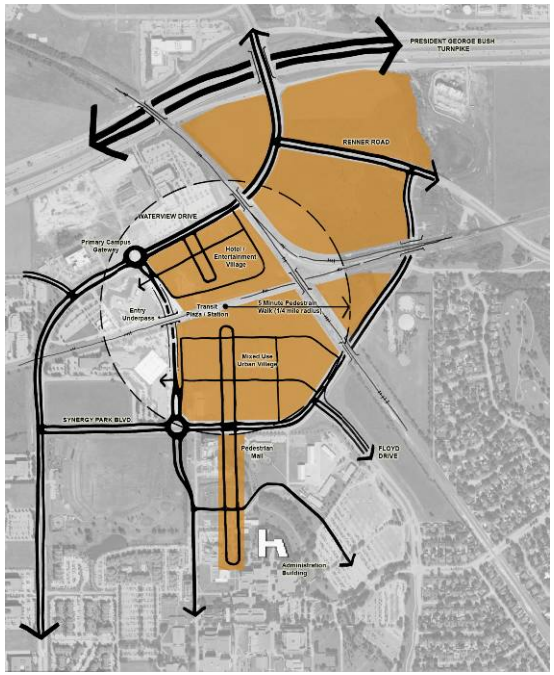
**Overview**
- New gateway street on the west side of the campus at Waterview, outside the study area
- Baseline cost = $0



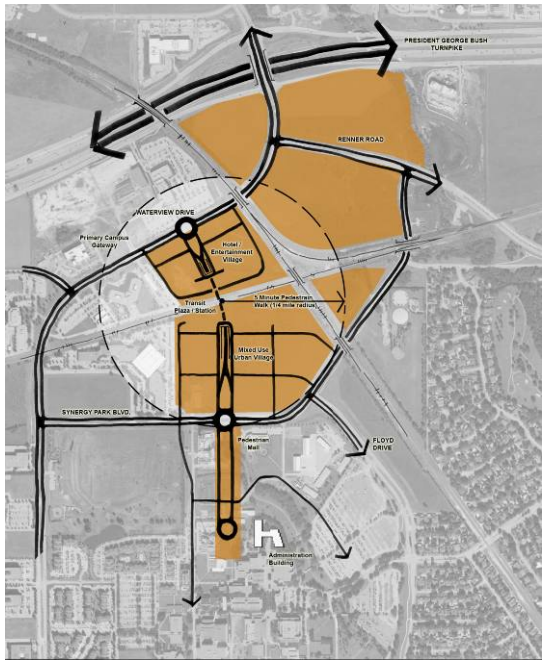

Underpass Example

**North Gateway Underpass Option:**
Under this scenario, the new entrance is a proposed roadway linking Waterview and Synergy Park Boulevard via an underpass of the Cotton Belt right-of-way. The underpass construction increases the cost of the project.

**Overview**
- New gateway with possible enhanced intersections along the western edge of the North Campus district
- Underpass of Cotton Belt railway
- Additional cost for underpass = $3.4 million



**North Gateway Mall Tunnel Option:**
Under this alternative, the new gateway is incorporated into the pedestrian mall/street design. The mall would be widened to accommodate an access road in the center of the right-of-way, including a 600' tunnel which would carry traffic under the station and transit plaza to preserve station access and operations. The tunnel adds considerably to the cost of construction.




**Overview**
- New gateway along the centrally-located pedestrian mall/street
- 600' tunnel under Cotton Belt rail and station
- Additional cost for tunnel = $17.0 million

**Preferred Access Alternative**
A review of these alternatives lead to the selection of the North Gateway Underpass option as the preferred alternative.

This underpass option would provide needed access to the campus, serve the planned TOD, preserve the pedestrian environment in the North Campus area and offer alternatives for the creation of one or more signature entry portals as well as providing additional access to the properties on the west side of the new development.

# 8. Land Use Concept

**Preferred Land Use Plan**

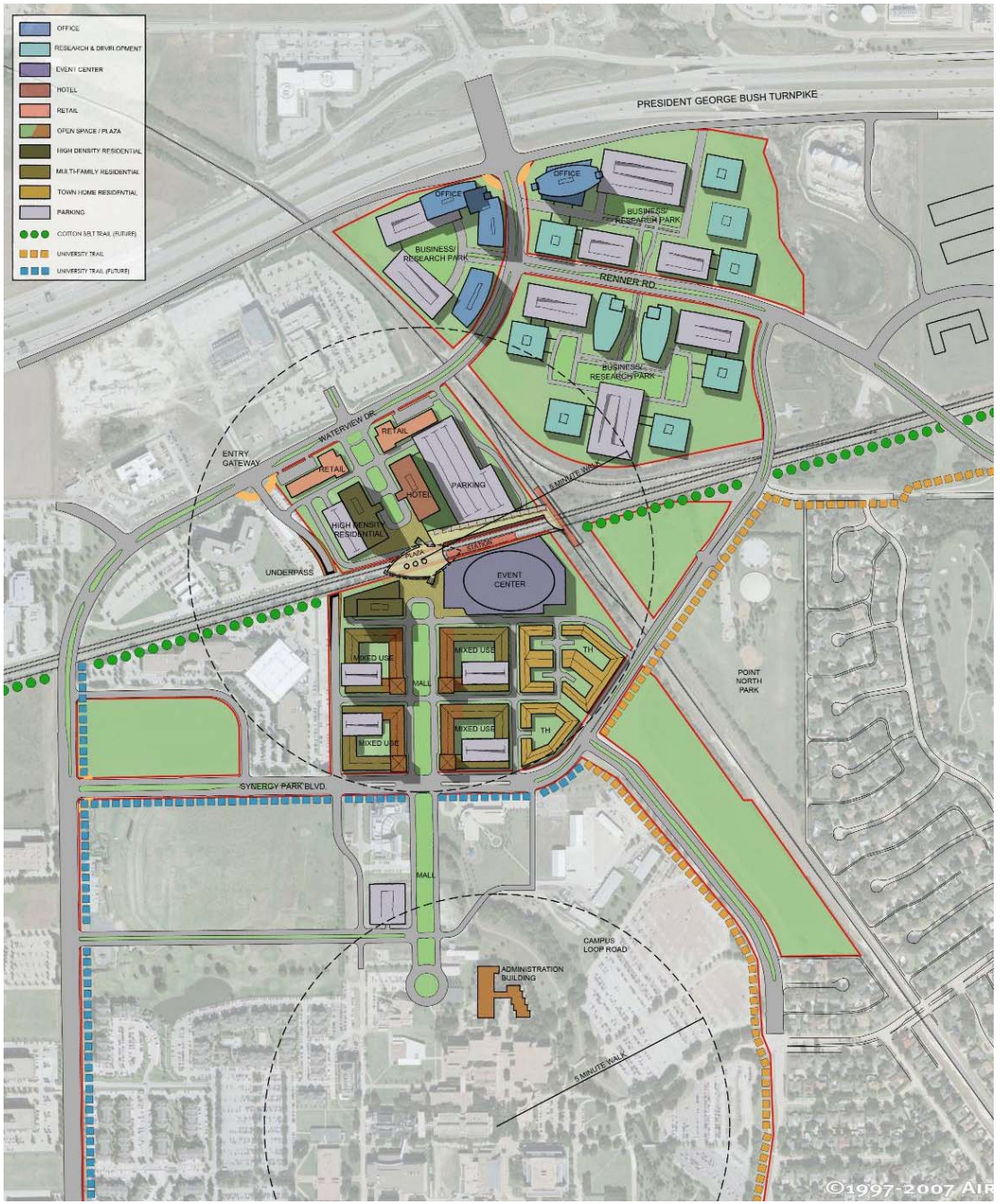
The primary framework of the preferred plan is a pedestrian-scale street grid and a pedestrian mall linking the UTD Station, the proposed North Campus development, an event center and the academic campus. A new street with an underpass of the Cotton Belt right-of-way is shown along the western edge of the North Campus to provide direct access to the existing UTD campus and entry to the transit-oriented district.

**Land Use South**

Pedestrian mall, bounded by a pedestrian-scale street with parking, extending from the rail station south across Synergy Park Boulevard and terminating at the existing campus administration building; mixed-use buildings with lower-level retail and housing above lining the pedestrian mall/street; event center with proximity and connection to both the existing campus and the UTD Station

**Land Use North**

Higher-density housing along the western edge of the pedestrian mall/street; hotel to the east; joint-use parking garage to accommodate the hotel, event center and rail station; retail buildings fronting on Waterview Parkway to serve the North Campus development as well as office uses north of Waterview and research uses east of the KCS right-of-way

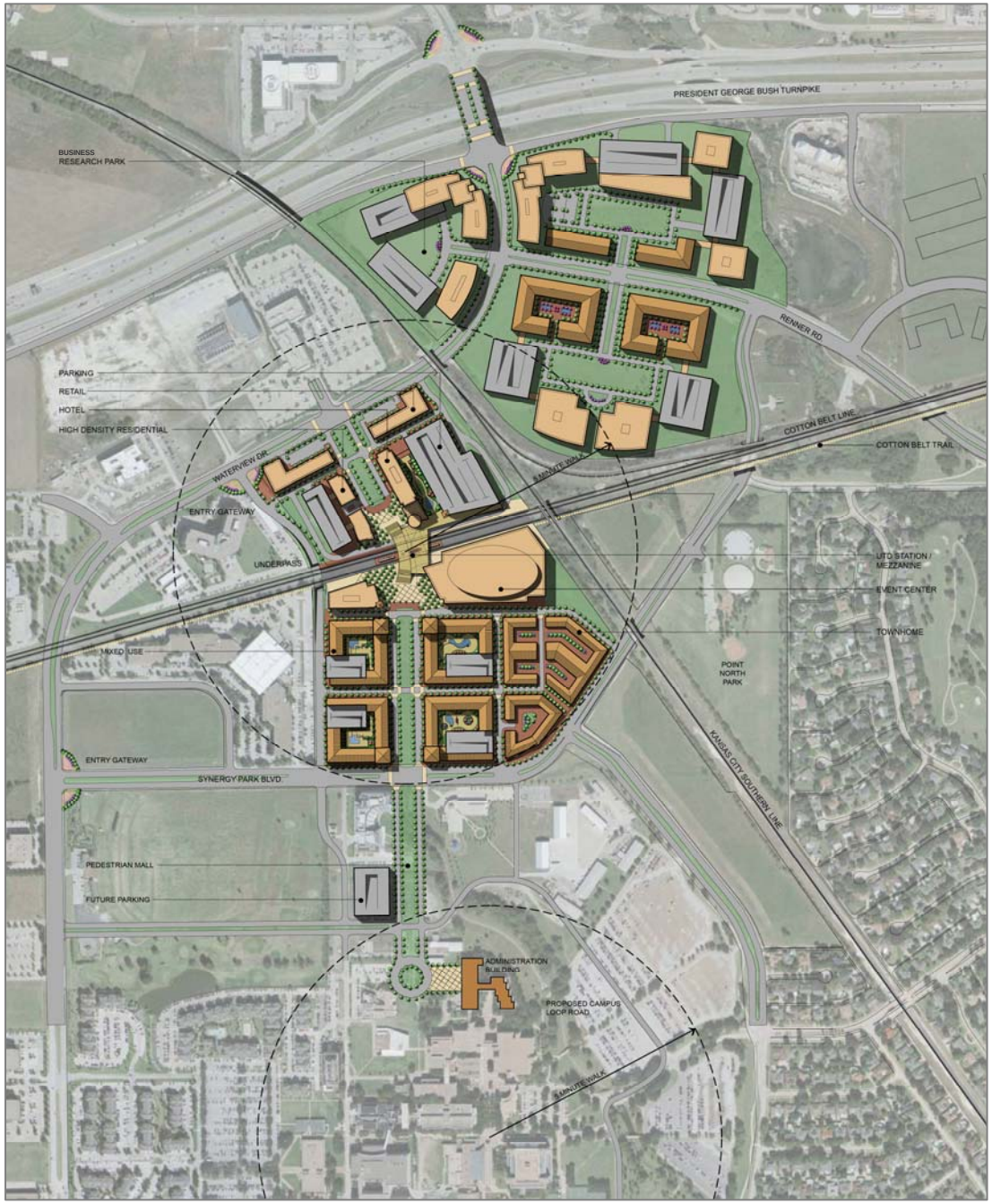


# 9. Master Plan

**Master Plan Framework**

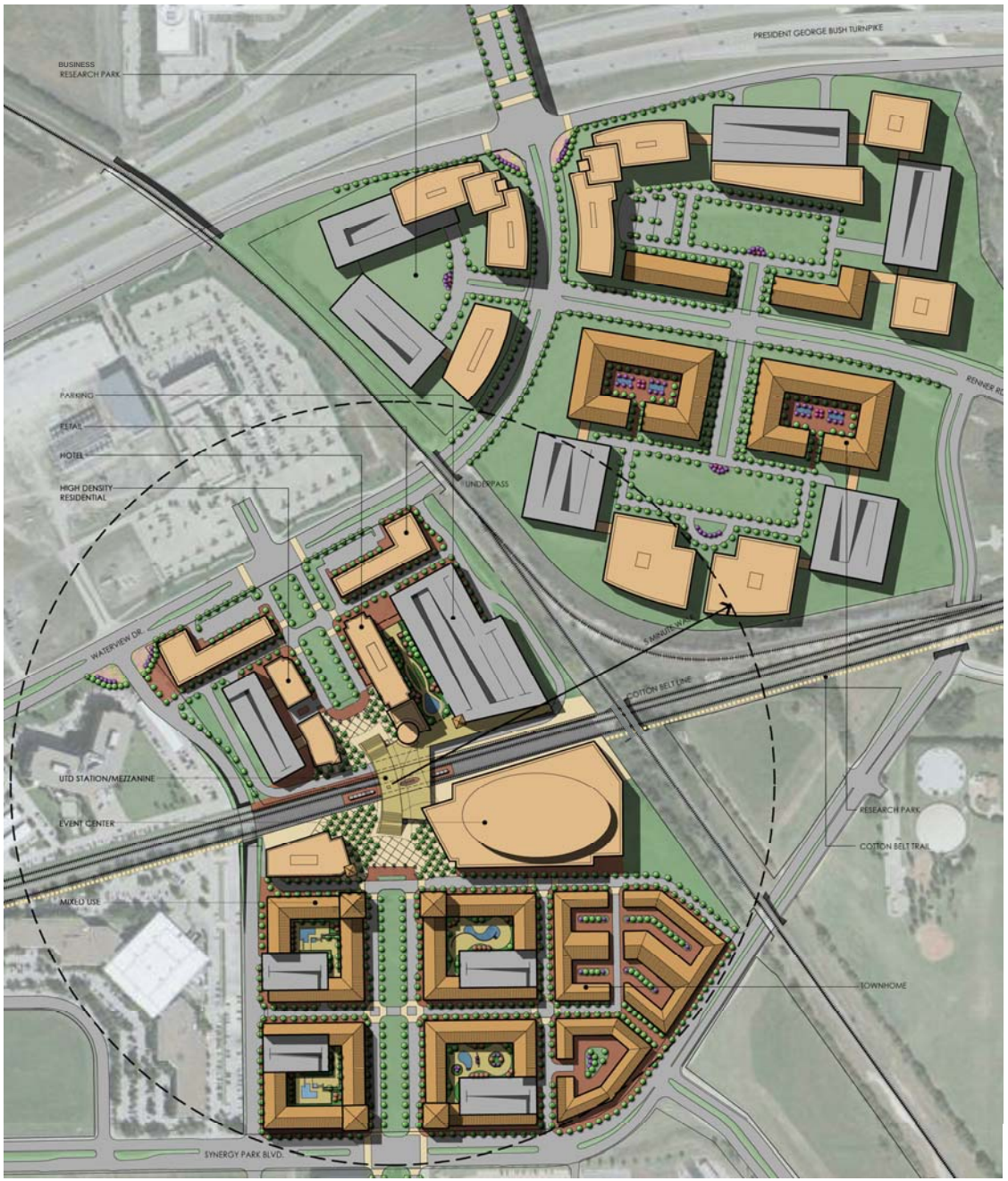
The basis of design for the master plan was derived from the preferred urban block land use concept and North Gateway Underpass configuration. The resulting street and pedestrian framework that resulted from these previous studies form the basis for flexible development parcels and a formal axial relationship of the existing UTD campus and proposed North Campus development to the UTD station. The north/south pedestrian mall and street axis provides the primary connectivity element and form giver to the master plan. The southern axis established by the mall/street connects the UTD Administration Building and Academic Mall with the north campus development and the station. The pedestrian mall is proposed to be fronted by ground level retail with faculty and student housing above. The level of activity generated by these uses will create an environment along the mall that includes both active and passive elements. The mall also connects the proposed Event Center and the campus core. The event center is located to take advantage of direct access from both transit and parking and a link to the campus buy way by way of the mall.

The northern axis links existing development north of Waterview Drive and proposed retail, multifamily housing and hotel uses south of Waterview with the station. An important aspect of this connectivity is the linkage of the intersection of the north and south axis at the station with a mezzanine spanning the Cotton Belt rail corridor. This mezzanine serves as the focal point and center of activity for the for the new North Campus development and serves multiple functions. The mezzanine and its iconic shade structure provides a covered access to the UTD station, creates a second level linkage between the proposed hotel and parking structure north of the Cotton Belt and the event center on the south and serves as an outdoor event venue. The parking structure provides shared parking for the UTD station (200 spaces), the hotel (500 spaces) and the event center (3500 spaces). The location of the parking structure on the north side of the Cotton Belt to take advantage of vehicular access from PGBT via Waterview.



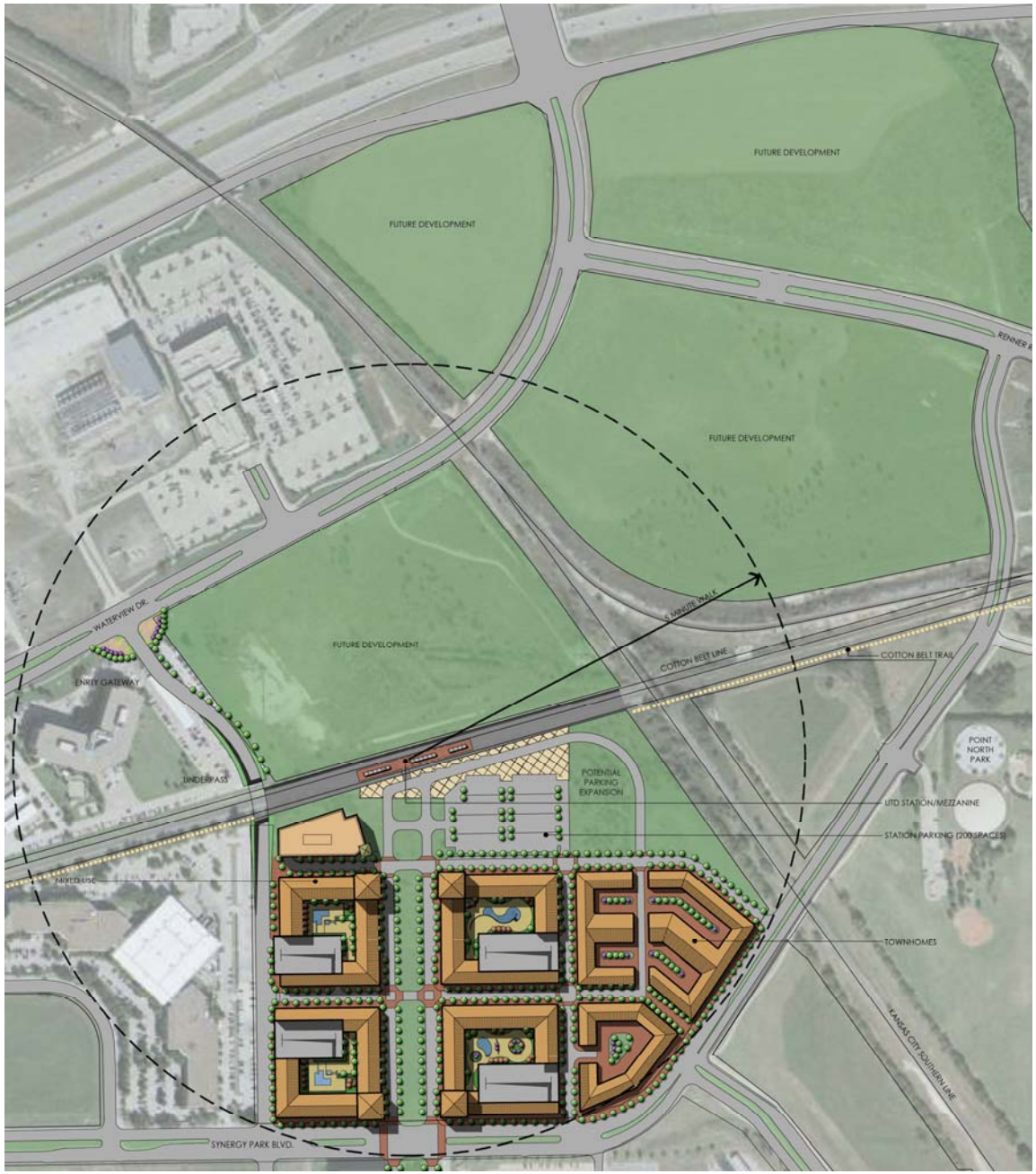
## Enlarged Plan Overview

- New northern gateway street
- Pedestrian mall/street linkage from the University to the North Campus
- UTD passenger station
- Mezzanine signature canopy across the rail corridor
- Multiple residential options including mixed – use buildings
- Retail fronting the pedestrian mall/street and Waterview Parkway
- Hotel and shared - use parking garage north of the rail corridor
- Event center south of the station
- Possible location for cultural facility
- Office/research development along PGBT



## Phasing

The UTD Station will almost surely be constructed and operational prior to full build-out of the North Campus plan. Construction of the mezzanine and adjacent development will follow. Initially, surface parking will be provided on the south side of the station on the future site of the event center. Once the event center goes under construction, the station parking will be relocated to the shared garage north of the rail corridor, which will provide parking for the hotel, event center and rail station, connecting to each use at the mezzanine level.




**Phase 1 Overview**

- UTD Station platform
- Pedestrian mall/street linking the station to the campus
- Surface parking south of the station (land bank for future event center)
- Mixed-use buildings with lower-level retail fronting on the pedestrian mall/street and residential uses above

# 10. Station Area Concept Development

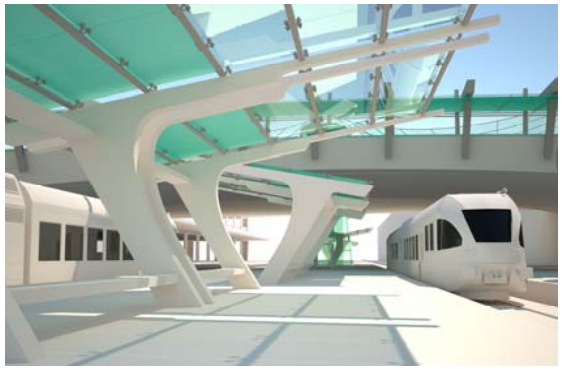
**Passenger Service/Freight Configuration**

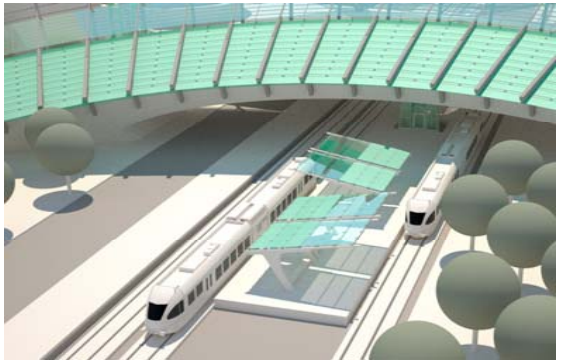
This study is based on the assumption that passenger service and freight service will share the existing Cotton Belt rail right-of-way. While a freight compatible passenger vehicle is anticipated, separation of service in the station area is desired for both safety and operations. To accommodate passenger rail, existing freight service will be relocated from the center of the 100 foot right-of-way to the north side of the right-of-way.

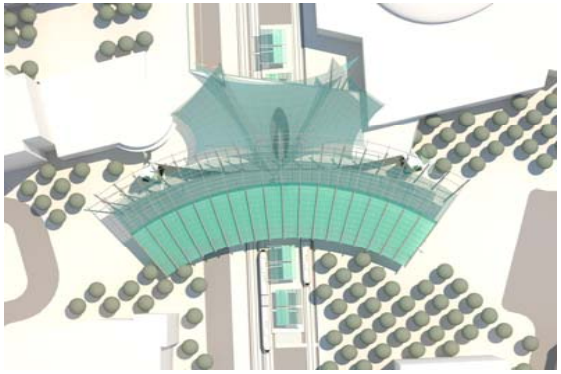
Passenger service on the south side provides the most effective configuration for stations east and west of the planned UTD Station and allows at-grade pedestrian access to the station from the campus side of the tracks. In addition, the shift of freight traffic to the north best suits the proposed Cotton Belt bicycle trail on the south side of the corridor, which will include a trailhead at the station plaza adjacent to the mezzanine.

**UTD Station**

The proposed UTD Station and related transit plaza is envisioned as the signature element of the North Campus development. The station will be constructed by DART within agency budget and system-wide design requirements. Initially, a lower-level plaza will provide access to the station from the south. Ultimately, the concept also calls for a mezzanine level with a signature canopy element. Access to the UTD Station will be provided by the mezzanine from above and by the plaza at grade. The mezzanine will allow for an unrestricted, pedestrian-friendly flow from the campus environment to the south, through the mix of buildings and activities in the North Campus district, to the office/research uses further north. The outstanding feature of the mezzanine will be a monumental stair integrated into the lower-level plazas. The stair is integrated into a concrete arch with an integrated canopy spanning the rail corridor and supporting the mezzanine. The key architectural elements in the station area - canopy, elevator, stairway, plaza, mezzanine - should be designed with distinctive, iconic style that makes a unique statement about UTD and its identity..

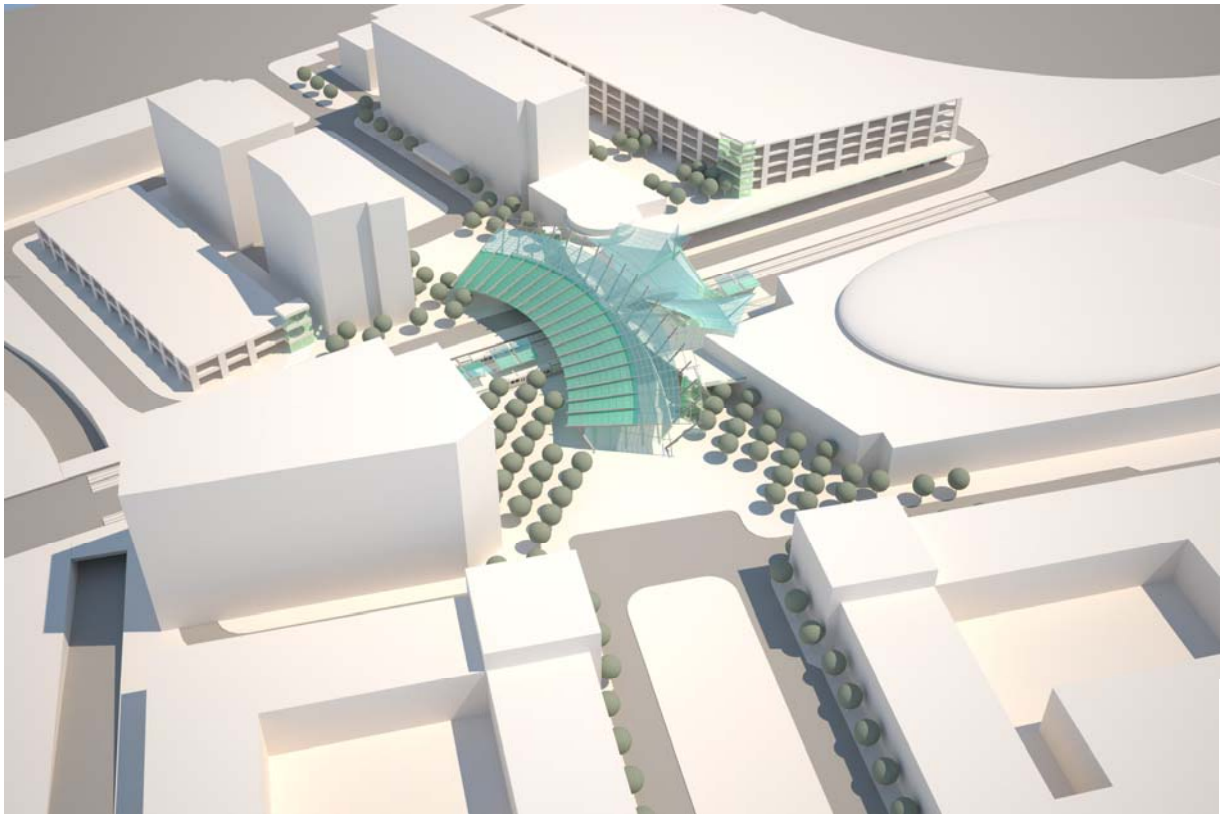


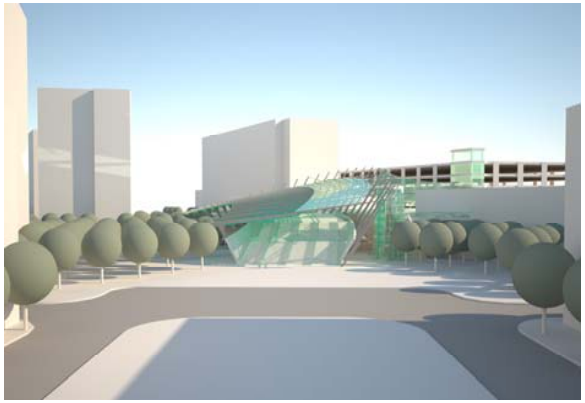


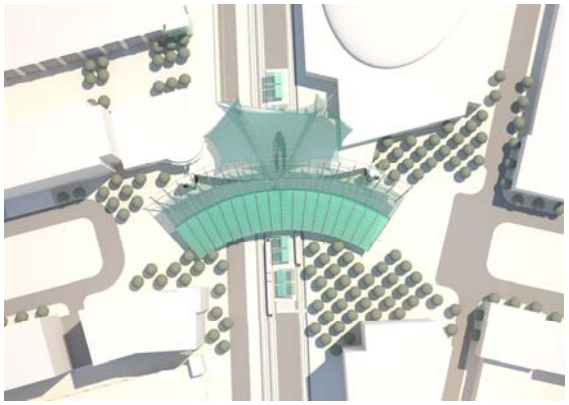


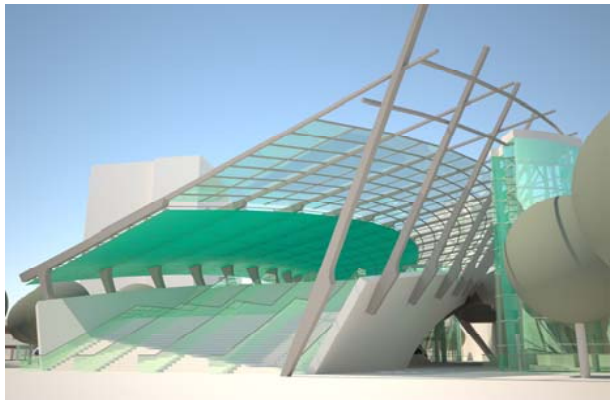
## Station Area Concept Development

Three-dimensional imagery was developed during the planning and design process to illustrate the massing and scale of the north campus environment. The images also depict the relationship of building edges to streets and open space and the termination of the north and south axial pedestrian mall at the public plazas. The design intent of the stairway and mezzanine as the iconic image and visual catalyst of the development is also illustrated.

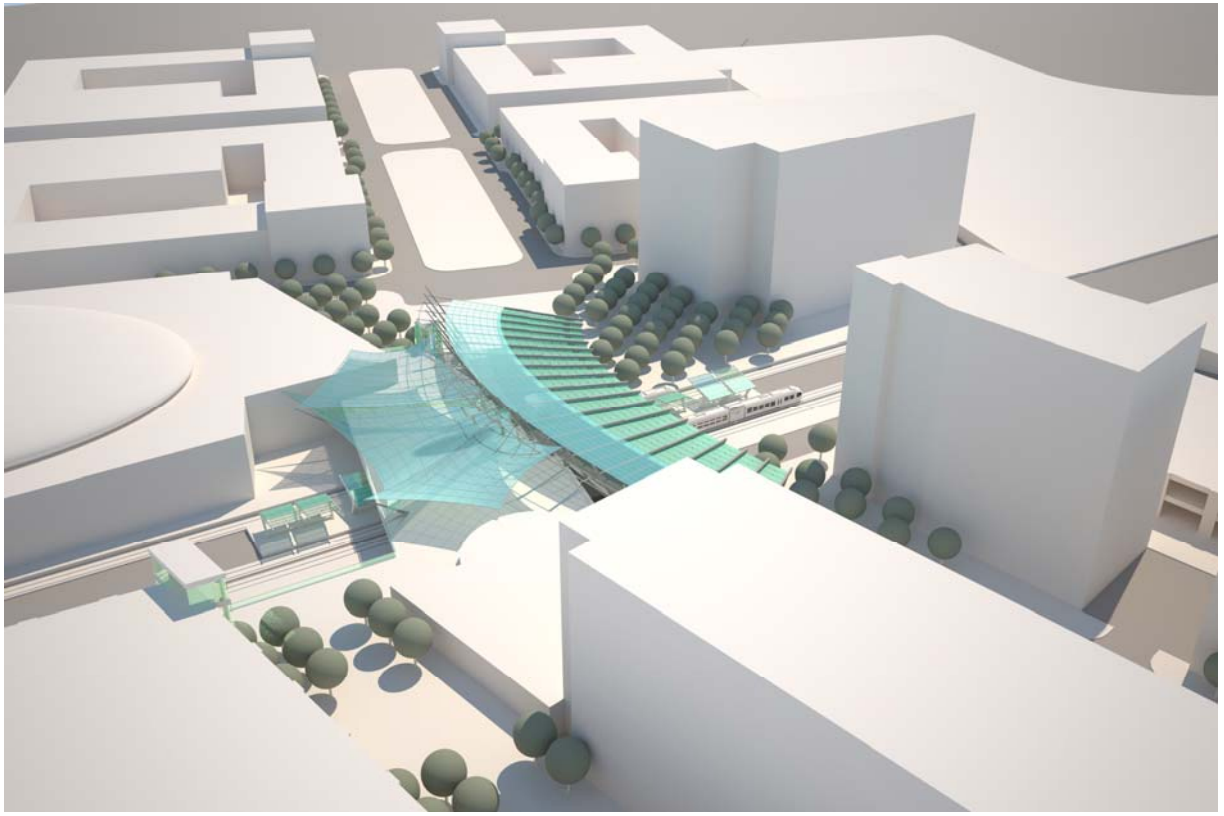


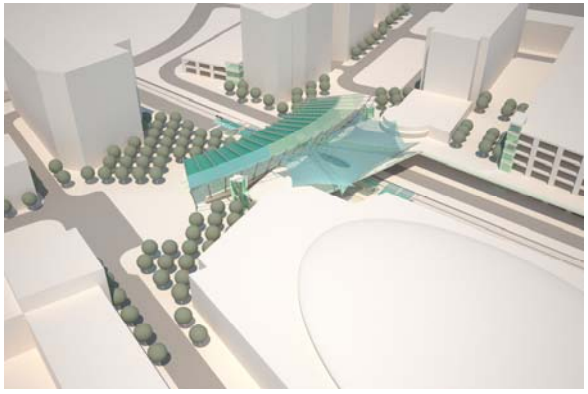


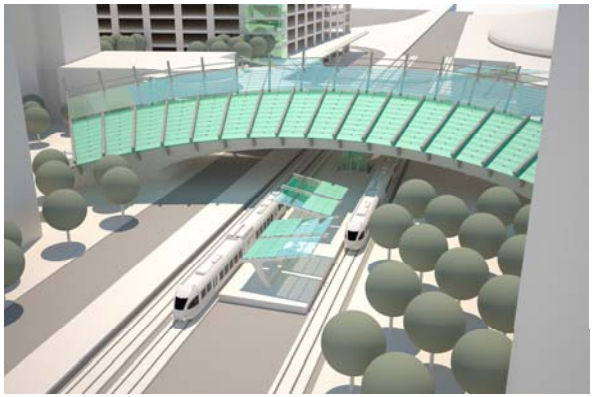


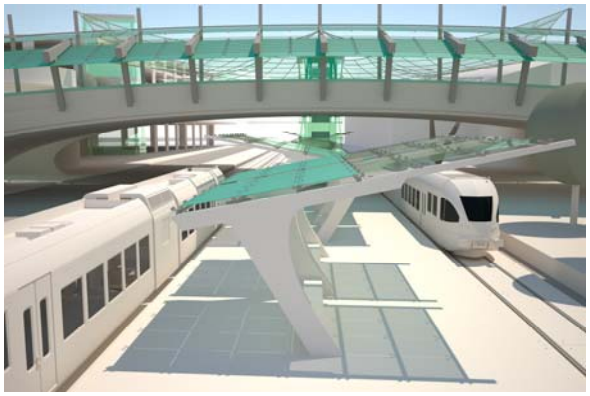


## Station Area Concept Development





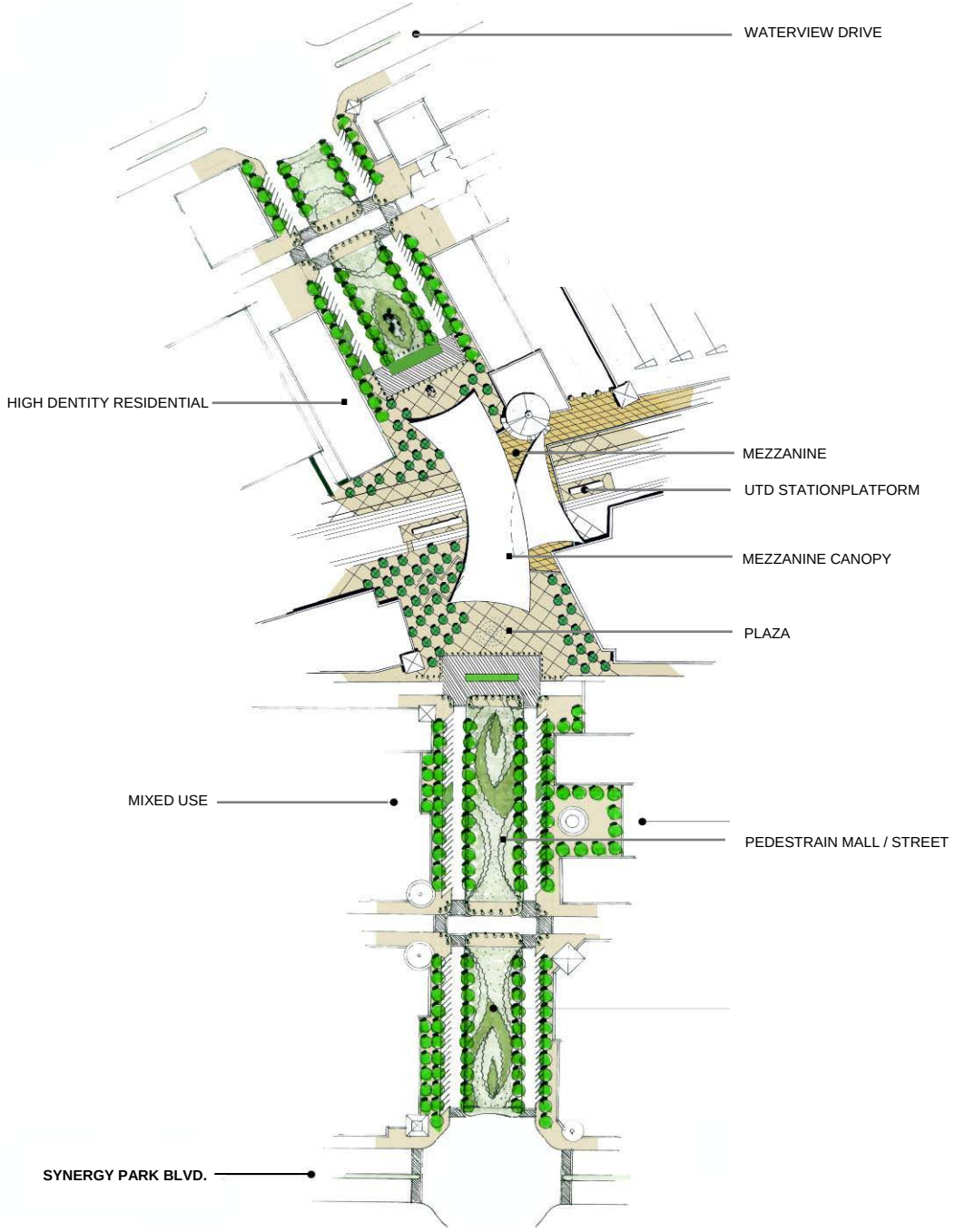




## Urban Design Plan

The urban design plan is intended to illustrate an early concept for development of the primary organizational elements of the master plan-the pedestrian mall/street, transit plaza and station mezzanine.

The landscaped pedestrian mall will serve as a passive area for student/faculty interaction and the pursuit of leisure activities by the general public. The mall will stretch from the UTD Administration Building, through the new North Campus district and across the station area to the retail buildings facing Waterview Parkway. The mall will be lined with on-street parking and streetscape elements which could include special paving, lighting, bollards, street trees, lawn areas, street furniture and other pedestrian amenities to promote an active pedestrian environment and support street-level retail along its edges. This open corridor will also establish an axial view from the UTD campus to the station and through the development. Central to this open space will be the station, with its mezzanine, monumental stair and elevator and iconic canopy element.




**Overview**

- Highly landscaped pedestrian mall/street with on-street parking
- Street-fronting retail
- View corridor from the campus through the transit-oriented district
- Signature canopy and stairway at the station site

# 11. Future Steps

The next phase of the study will test the master plan against best practices in transit-supportive development, market demand and a financial plan to ensure that the TOD potential is maximized. As part of this process, guiding principles will be applied to create a public/private finance and development plan for the North Campus area.

These guiding principles will address issues such as:

- Acceptable level of risk for the City and UTD
- Willingness and ability of the City and University to invest
- Initial position on the maximum amount of capital investment
- Level of control desired by various parties
- Desired level of protection from developer downside
- Pre-development and development schedule

The Preferred Land Use, Master Plan and Phasing Plan will be finalized based on refinements to the proposed land use mix, development intensities and financial plan. During this process, additional detail will be developed relative to freight operations, a parking analysis and a plan for vehicular circulation.

**Overview - Next Phase of the Study**

- Market analysis based on the proposed land use mix and densities
- Infrastructure cost analysis
- Development/Financial analysis
- Public/Private finance plan
- Refinement of preferred master plan based on financial analysis
- Development phasing plan
- UTD Station construction details
- Resolution of freight/passenger service operations
- Circulation/Parking analysis
- Station area urban design plan