LEANDER CITY COUNCIL
and
UNIVERSITY OF TEXAS
WORKSESSION
CITY OF LEANDER, TEXAS

Pat Bryson Municipal Hall ~ 201 North Brushy Street ~ Leander, Texas

Thursday ~ December 1, 2016 at 6:00 p.m.

Mayor – Christopher Fielder	**Place 4 – Ron Abruzzese (Mayor Pro Tem)**
Place 1 – Andrea Navarrette	**Place 5 – Jeff Seiler**
Place 2 – Michelle Stephenson	**Place 6 – Troy Hill**
Place 3 – Shanan Shepherd	**City Manager – Kent Cagle**

This meeting is open to the Public but does not allow for public participation

1. Open Work Session
2. Roll Call
3. Presentation of the 2015/16 Texas City Lab Project in Leander
4. Adjournment

CERTIFICATION
This meeting will be conducted pursuant to the Texas Government Code Section 551.001 et seq. At any time during the meeting the Council reserves the right to adjourn into executive session on any of the above posted agenda items in accordance with the sections 551.071 [litigation and certain consultation with attorney], 551.072 [acquisition of interest in real property], 551.073 [contract for gift to city], 551.074 [certain personnel deliberations] or 551.076 [deployment/ implementation of security personnel or devices]. The City of Leander is committed to compliance with the American with Disabilities Act. Reasonable modifications and equal access to communications will be provided upon request. **Please call the City Secretary at 512/ 528-2743 for information.** Hearing impaired or speech disabled persons equipped with telecommunications devices for the deaf may call 512/ 528-2800.I certify that the above agenda for this Joint Work Session of City Council and the Charter Review Commission of the City of Leander, Texas, was posted on the bulletin board at City Hall, in Leander, Texas, on the 23rd day of November, 2016 by 5:00 pm pursuant to Chapter 551 of the Texas Government Code.

Debora Penberg

Debora Penberg, TRMC, Interim City Secretary

AGENDA ITEM #3

Executive Summary

December 1, 2016

Agenda Subject: Work session to showcase the work of the 2015/16 Texas City Lab project in Leander.

Background: In 2015 the City partnered with The University of Texas at Austin's Center for Sustainable Development in their new program called Texas City Lab. The goal of the program is to create partnerships between students and faculty at the university and Texas cities in order to provide research and consulting assistance to the cities and to provide hands-on learning experiences for the students.

The City's participation in the program spanned the course of the 2015-2016 academic year.

The City identified several projects that the City Lab staff and faculty designed their courses and research around. Ten of the classes developed research projects based upon the selected topic areas. These research projects fit into one of three areas jointly identified by the City and program staff:

1) Development of a plan for Leander's downtown, including historic resources, green infrastructure, creek planning, and bike connectivity.

2) Sustainable land use and transportation planning.

3) Design and financial analysis of mixed use areas with mixed housing, retail, and office.

City staff met over the course of the academic year with faculty and students as they completed research and projects on topics specific to Leander.

An overview of the courses that were involved in the program is attached.

This work session will allow Council to review the deliverables and discuss the outcomes from the project.

Origination: Staff

Attachments: 1. Texas City Lab program overview
2. Course overviews
3. Final Report (pending may be sent as a supplement)

Prepared By: Tom Yantis, AICP
Assistant City Manager 11/22/2016

Texas
CityLab

Program Overview

Texas CityLab is an interdisciplinary applied learning strategy for university faculty and students to engage with Texas communities to address economic, social equity and environmental challenges facing Central Texas.

Part of the Center for Sustainable Development at the University of Texas at Austin, Texas CityLab brings diverse students and faculty together for applied research and sustainability work. Through this service-learning program, students will have unique access to experiential learning opportunities across several disciplines. In tandem, the program will also help Central Texas cities address their critical sustainability issues by bringing together the unique resources available at the University of Texas.

Each year, Texas CityLab contracts with one Texas city; together, Texas CityLab and city staff and officials jointly identify sustainability projects for existing UT classes to address. Then, over the course of two semesters, classes in multiple disciplines will research and explore these projects, culminating in a final report encompassing the interdisciplinary findings.

2014- 2015 Academic Year

In its inaugural year, the Texas CityLab is partnering with University of Texas Campus Planning & Facilities Management. As the "city" in our backyard, the 80,000-person University of Texas campus offers an ideal platform for Texas CityLab. During the 2014-2015 academic year, fifteen classes will explore solutions to a range of sustainability challenges on campus. Working with the Facilities and Operations team at the University of Texas and in alignment with the UT Campus Master Plan goals, the year's courses focus on five project areas: energy and water conservation, the value proposition of sustainability, Waller Creek, wildlife and biodiversity and zero waste.

Project Contacts

Faculty PI: Dr. Katherine Lieberknecht (klieberknecht@utexas.edu)
Manager: Sarah Wu (sarahwu@austin.utexas.edu)
Coordinator: Kaethe Selkirk (kaethe.selkirk@gmail.com)

To stay informed of Texas CityLab, be sure to follow the Center for Sustainable Development on Facebook and on Twitter (@UTSoA_CSD, #TXCityLab).

Texas
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CONTACT

Please contact us for more information, or if you would like to schedule a visit with CityLab staff to learn more.

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SUSTAINABLE LAND USE PLANNING

COMMUNITY AND REGIONAL PLANNING
DR. ROBERT PATERSON
SPRING 2016

Contemporary land use planning requires an analysis and understanding of physical and social demographics, growth trends, smart growth practices, sustainable community planning, and new urbanism. A thoughtful and context-specific integration of these frameworks informs the master planning process.

Sustainable Lane Use Planning is designed in two parts, each informing the development of land use scenarios for the City of Leander. The first part provides background information on the history, institutional frameworks, purpose, principles and values inherent in land use and comprehensive planning today. The second part covers the background analytic and participatory skills needed for preparing to undertake land use planning.

As a case study, students will explore how the City of Leander synthesizes values, vision, and analytic information through an iterative scenario planning process with Envision Tomorrow. The result will be a series of future land use maps and comprehensive plan components that the city can use to inform their physical planning processes.

Texas CityLab

CONTACT

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PUBLIC TRANSPORTATION ENGINEERING

CIVIL ENGINEERING
DR. RANDY MACHEMEHL
FALL 2015

Public Transportation Engineering provides students the tools to characterize public transportation modes in terms of their most appropriate urban area applications. This includes the ability to conceptually plan and design integrated public transportation systems, that is, systems including multiple modes.

As an independent project within the course, two students will engage a context-specific analysis of connectivity and public transportation access within the City of Leander. A report that includes their findings and recommendations will serve Leander as it refines and develops transportation opportunities for its growing population.

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URBAN DESIGN STUDIO

URBAN DESIGN
PROFESSOR DEAN ALMY
FALL 2015

Leander, Texas faces sustainability challenges associated with an increased demand for suitable urban housing and community amenities. Population growth and demographic change will impact Leander's physical landscape and give new identity to the concept of density within the city.

Students will explore Leander's increasingly urban landscape in an effort to construct a new set of flexible and individualized design models that guide current and future growth. In doing so, they will investigate the relationship between spatial and technical urbanism, physical orders established by urban and landscape systems, and strategies for producing new urban landscapes. By considering Leander's current and future context, the studio will develop a series urban design scenarios that respond to the community's changing structure.

Texas CityLab

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PRESERVATION PLANNING AND PRACTICE

HISTORIC PRESERVATION
DR. MICHAEL HOLLERAN
FALL 2015

Leander provides student preservationists an opportunity to apply their practice. Students will examine preservation opportunities within Leander's institutional context. This includes an exploration of federal, state and local governments, non-governmental institutions, and the private sector support systems.

Students will develop tools for implementing preservation policy and programs that fit into Leander's larger vision for the city, economic development plans, and regional efforts. Their work will include an inventory of Leander's historic assets and a series of best practices and design strategies that can be used to guide development in the Downtown Historic District.

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URBAN STUDIES RESEARCH METHODS

URBAN STUDIES
DR. PAUL ADAMS
SPRING 2016

Student research projects will contribute to the development a city-wide sustainability plan. Each project will engage archival, observation, survey, and interview research methods in an effort to uncover specific aspects of sustainability that Leander's developing plan should address.

Students will offer recommendations relating to how the plan is best organized and specific metrics for measuring sustainability in the near and long-term. Leander can use this information to develop planning documents and policies that ensure quality of life through community-focused sustainability.

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ADVANCED ARCHITECTURAL DESIGN: TECHCOM

ARCHITECTURE
PROFESSOR MATT FAJKUS
FALL 2015

Student teams will engage a mixed-use design project at one of three specific sites in the City of Leander: Historic Downtown, Transit Oriented Development (TOD) RedLine Station, and Central East. The architectural design project will develop built spaces that speak to the community's current and future identity.

The project will begin with a research component to generate links between site and mixed-use program. A schematic design will be produced in model and 2D drawing formats, followed by design development with 3D components, and a sampling of detail drawings. Projects will integrate technical building issues with presentation and construction documents.

The final product produced by each student team will include a presentation and construction package that combines all aspects of their design. Leander can use these architectural projects to visualize how community building might be strengthened through physical structure.

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FINANCING PUBLIC SERVICES

COMMUNITY AND REGIONAL PLANNING
DR. MICHAEL ODEN
FALL 2015

Students will explore the specific institutional, tax and spending challenges associated with managing growth and supporting more sustainable development paths for Leander, Texas. As a core case study, students will analyze ways to estimate the fiscal impacts of different development forms and the broader "costs of growth" within the City of Leader.

The Local Fiscal Impact Model (LFIM) will be used to evaluate the fiscal impacts of three distinct development scenarios. Student analysis and reports will enable the City of Leander to better determine specific costs and benefits associated with development patterns. The modeled scenarios will be linked to the Envision Tomorrow planning system. The spring Sustainable Land Use Planning course will use the fall's fiscal findings in their physical planning efforts.

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REAL ESTATE DEVELOPMENT

COMMUNITY AND REGIONAL PLANNING
DR. JAKE WEGMANN
SPRING 2016

Leander's rapid population growth and demographic change requires an understanding of how real estate can be developed sustainably. The majority of Leander's residential housing stock is single-family. Increasingly dense typologies are needed to serve incoming residents and maintain affordability throughout the community.

Students in Real Estate Development will research and evaluate the feasibility of sustainable residential development types. Typologies include townhouses, live/work, multi-unit, multiplex, bungalow, courtyard, and carriage homes. Working in small groups, each research team will develop a 15-20 page report that examines a different housing type.

Students will have an opportunity to present their analysis and findings to city staff and Council. Final reports will include case studies or precedents from other cities in similar regions and feasibility determinations generated through data analysis and discussions with developers, engineers, planners, and other relevant professionals.

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TRANSPORTATION ORIENTED DEVELOPMENT

COMMUNITY AND REGIONAL PLANNING
DR. MING ZHANG
SPRING 2016

Transit Oriented Development (TOD) integrates transportation and land use in urban forms that surround transit stations. Moderate to high densities, mixed uses, pedestrian and bicycle connectivity, and environmental access are design characteristics often associated with TOD sites. Leander's TOD site is located at the end Capital MetroRail's RedLine, a 32-mile transit corridor that connects the greater Austin region.

Leander's TOD site will be significantly impacted by the development of a new Austin Community College Campus (ACC) in close proximity. Research projects in this spring course will explore how the development of the new ACC campus will influence development patterns in the surrounding area. Students will inform their research using series of case studies that highlight the relationship between TODs and higher education facilities.

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INTRODUCTION TO GIS AND VISUAL COMMUNICATION

COMMUNITY AND REGIONAL PLANNING
DR. JUNFENG JIAO
SPRING 2016

Leander will become increasingly sustainable by promoting connectivity and pedestrian access within the community. A more connected landscape will benefit current residents by creating outdoor networks. These networks will allow people to move through the city with an increasing amount ease. It will also serve future students enrolled at Leander's Austin Community College campus. Located in close proximity to the city's transit oriented development (TOD) site, students without cars will gain better access to amenities and housing near campus and downtown.

Students in Introduction of GIS and Visual Communication will use GIS and Adobe software to analyze bicycle networks and connectivity within a two-mile radius of Leander's TOD site. Specific attention will be placed on the identification of bike network gaps and barriers to connectivity. Research will include best practices and improvement recommendations that align with the city's current and future land use plans.

TEXAS CITYLAB

2015–2016 FINAL REPORT

City of Leander

csd
Center for Sustainable Development

Texas CityLab
2015–2016 Final Report

Center for Sustainable Development
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The University of Texas at Austin
310 Inner Campus Drive Stop B7500
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Students join City of Leander's Assistant City Manager Tom Yantis on a tour of the Leander MetroRail station.

Cover photo: Aerial view of Leander, Texas.

Texas CityLab

City of Leander

The University of Texas at Austin
School of Architecture

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ACKNOWLEDGMENTS

The inaugural year for Texas CityLab would not have been possible without the dedication and generous support of:

City of Leander, Texas

The University of Texas at Austin School of Architecture Center for Sustainable Development

We would also like to thank all faculty and student participants in the Texas CityLab program, as well as the following individuals and organizations for their contributions:

Christopher Fielder | *Mayor, City of Leander*
Ron Abruzzese | *Mayor Pro Tem, City of Leander*
Troy Hill | *City Council Member, City of Leander*
Andrea Navarrette | *City Council Member, City of Leander*
Jeff Seiler | *City Council Member, City of Leander*
Shanan Shepherd | *City Council Member, City of Leander*
Michelle Stephenson | *City Council Member, City of Leander*
Kent Cagle | *City Manager, City of Leander*
Tom Yantis | *Assistant City Manager, City of Leander*
Robert Powers | *Finance Director, City of Leander*
Robin Griffin | *Senior Planner, City of Leander*
Martin Siwek | *Planner, City of Leander*
Sean Lafferty | *GIS Coordinator, City of Leander*
The Leander Chamber of Commerce
The Texas CityLab Advisory Council
Katherine Lieberknecht | *Texas CityLab Principal Investigator*
Sarah Wu | *Center for Sustainable Development*
Kaethe Selkirk | *Texas CityLab Graduate Research Assistant*
Adrian Lipscombe | *Texas CityLab Graduate Research Assistant*
Rebecca Fleischer | *Texas CityLab Final Report Editor*
The Center for Sustainable Development “Brain Trust”

CONTENTS

INTRODUCTION

As an alumnus of The University of Texas (B.A. '93, M.S.C.R.P. '95) it is a special privilege to have participated in the 2015-16 Texas CityLab project. Leander is one of the fastest growing cities in the United States. That brings with it exciting opportunities, but also significant challenges to ensure the growth is managed in a way that creates long term value for the City and its residents. A fast growing, small city rarely has the staff resources to dedicate to long range planning activities, because the staff it does have are overwhelmed by the day-to-day work of city government. CityLab provides a unique opportunity to engage the students and faculty of the program to not only provide a long-term perspective on issues facing the city, but also an outsider's view and fresh ideas.

Leander has been a city with a vision for many years. From its earliest history when it picked up and moved from the original settlement of Bagdad to take advantage of the newly constructed railroad, Leander has been a city that can see the big picture. Decisions by its citizens to embrace long term goals included joining the Austin Community College District and the Capital Metropolitan Transportation Authority in 1985. For a small town these were major decisions that would help shape the course of its growth for decades.

Following on these earlier choices, the City saw the convergence of two major transportation projects as an opportunity to plan a different kind of suburb. The construction of the 183A Toll Road and the opening of Capital Metro's new commuter rail service on the existing railroad tracks created new linkages between Leander and the growing job market in Austin. Leander leaders saw an opportunity to take advantage of these linkages to plan for a new, high density, mixed-use town center around the rail station with convenient access to the toll road.

Fast forward to the present and Leander's vision is paying off. In 2004, Capital Metro held a successful bond election to construct the 32 mile Red Line connecting Leander to downtown Austin. The Red Line began operations from the Leander Station in 2010. In 2014, the Austin Community College District had a successful bond election that included the construction of a Leander campus. Construction on the campus broke ground in 2016. And to top things off, in 2016 Leander was identified by the U.S. Census Bureau as the fastest growing city in the United States with a population over 15,000.

It is within this exciting context that Texas CityLab engaged with the City of Leander to help us harness this momentum and direct it in a way that leads to a long term, sustainable community. We had the privilege to work with a variety of classes across multiple disciplines this past year to address a wide range of community issues. Whether it was documenting historic resources, re-imagining development along major corridors, or exploring the market potential of new housing types, CityLab provided the City with a wealth of research and ideas that we can use to inform our future.

Having been a student in many of the same classes that participated in CityLab (albeit a long time ago!), I believe the hands-on experience this program offers students and faculty is far superior to the traditional pedagogic model of classroom lectures. Our cities need assistance in researching best practices and understanding how to apply them in a real world context and our students need access to the best lab of all, the city.

I would like to thank everyone at UT who made the 2015-16 CityLab program possible. I would also like to thank the Leander City Council for continuing the City's visionary approach to municipal government by being the first Texas city to participate in the Teas CityLab program.

TOM YANTIS
Assistant City Manager of Leander

PROGRAM BRIEF

Texas CityLab (TCL) is an experienced-based, interdisciplinary applied learning program that partners Central Texas communities with university courses and resources. Sponsored by the Center for Sustainable Development at The University of Texas at Austin, TCL strengthens sustainability in the built environment.

Each year, TCL contracts with one Texas city; together, CityLab personnel and city officials identify sustainability projects for existing university classes to address. TCL program staff then enlist 10-20 university courses to tackle these identified projects, harnessing the energy, enthusiasm, and research of faculty and students across campus departments. At the end of the academic year, CityLab presents the partner city with a report of student-and faculty-led analysis, best practices, and proposed designs. Examples include strategies for stormwater management, affordable housing, efficient transportation, and community outreach. TCL results in sustainability progress for communities, meaningful learning and professional development for students, and an opportunity for faculty to link classroom work to life outside the university.

In the 2015-2016 program year, Texas CityLab partnered with Leander, Texas. Like many Central Texas cities, Leander enjoys strong economic and population growth, but faces sustainability challenges that accompany this growth. Fortunately, as Assistant City Manager Tom Yantis describes in the Introduction, Leander and its residents have a history of proactively planning for their community's future. We are honored that Texas CityLab is now a part of Leander's tradition of innovation and long-term thinking, and we thank Leander's City Council for participating as Texas CityLab's first city partner.

During the year, over 200 students from 10 classes across the university worked with Leander and CityLab staff to develop and undertake research projects that support the city's

Dr. Katherine Lieberknecht speaks with representatives from City of Leander and UT professors during this year's CityLab kickoff.

sustainability needs and goals. Students interacted with Leander staff and leadership through data sharing, classroom lectures, and reviews. In addition, many students undertook site visits to Leander, where they researched topics such as Leander's historic housing stock and downtown, current housing and commercial development opportunities, bicycle and pedestrian connectivity, and environmental resources and assets. Both in the classroom and in the field, students learned first-hand about the relationship between development and sustainability and how community-driven research can positively impact a growing and increasingly vibrant city.

The following annual report summarizes the year's research and provides Leander leadership with designs, scenarios, models, and policy recommendations specific to the Central Texas community and context. In addition to this report, comprehensive documentation of all student work can be found in the complete files, which have been presented to the City of Leander.

1. LAND USE SCENARIOS FOR LEANDER

COURSE

SUSTAINABLE LAND USE PLANNING
School of Architecture, Community and Regional Planning Program
Associate Professor
Robert Paterson, Ph.D.
Spring 2016

Contemporary land use planning requires an analysis and understanding of physical and social demographics, growth trends, smart growth practices, sustainable community planning, and new urbanism. A thoughtful and context-specific integration of these frameworks informs the master planning process.

Sustainable Land Use Planning classwork focused on two curricular units, each informing the development of land use scenarios for the City of Leander. The first part provided background information on the history, institutional frameworks, purpose, principles and values inherent in land use and comprehensive planning today. The second part covered the background analytic and participatory skills needed for preparing to undertake land use planning.

As a case study, ten student teams explored how the City of Leander synthesizes values, vision, and analytic information through an iterative scenario planning process. Students used Envision Tomorrow, an innovative open source software that allows users to identify the long-term effects of various development scenarios on municipal budgets and a variety of community health and sustainability indicators. The software allowed them to create and analyze two potential scenarios for Leander's transit oriented development (TOD), in addition to a status quo scenario based on Leander's current development pattern. The result was a series of future land use maps and comprehensive plan components that the city can use to inform their physical planning processes. The following section highlights work from two student groups from the course. Overall, the entire class generated twenty scenarios of alternative futures.

View of Leander, Texas and the Hill Country.

LEANDER TRANSIT DISTRICT FUTURES SCENARIOS

STUDENTS

Zhongliang Lang
Akik Patel
John Tiebout
Christopher Sailer
Tahnee Yoon

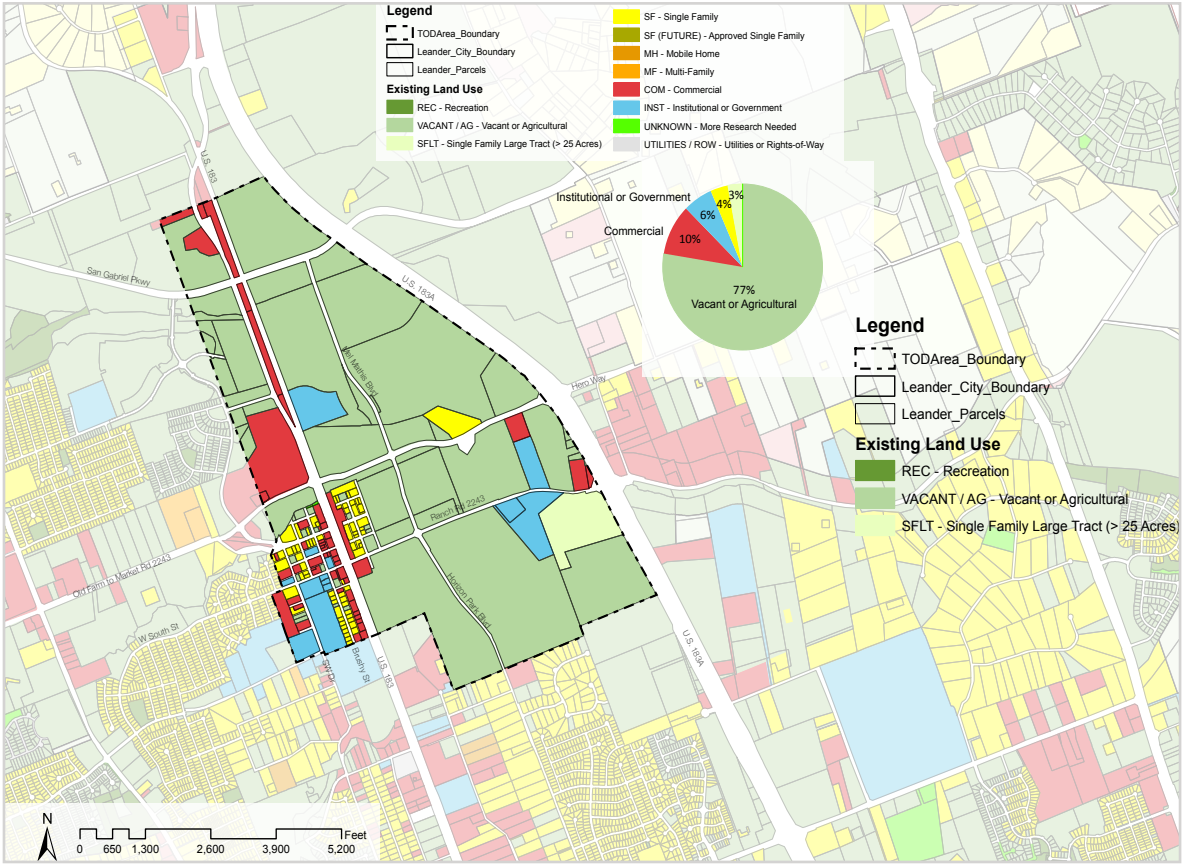
Each group was tasked to create a report on Leander's current development profile followed by a simulation of high sustainability and transit oriented development (TOD) scenario proposals. By assessing Leander's strengths, weaknesses, opportunities, and threats (SWOT), students were able to produce scenarios that addresses community needs.

The suitability map distinguishes which parcels are preferable for development juxtaposed to the existing land use.

SWOT ANALYSIS

	CONNECTIVITY	URBAN FABRIC	IDENTITY
Strength	Excellent Regional Transit Connectivity	Supply of vacant land allows flexible development	Pride in schools and Hill Country landscape
Weakness	Poor Local Connectivity	Major thoroughfares limit access and mobility	Lack of Cohesive Leander Identity
Opportunity	A regionally accessible TOD will attract retail spending	Expand walkable Old Town	Potential for high school - ACC partnership
Threat	Limited transit services	High property values could exclude marginalized groups	Racial income disparity threatens to fracture Leander

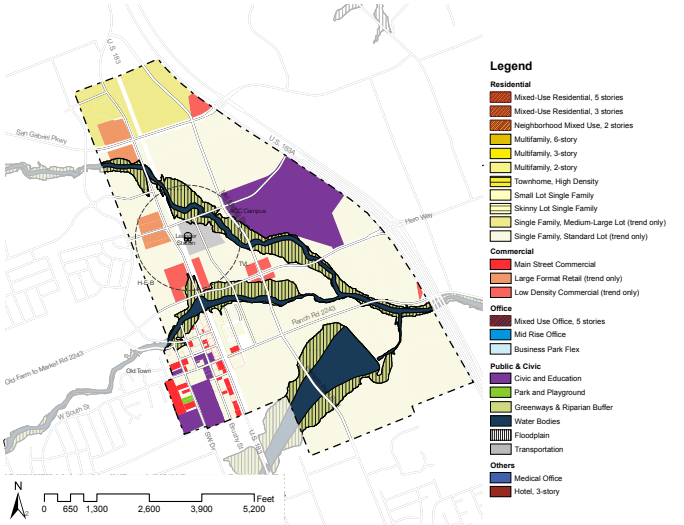
EXISTING LAND USE



Existing land use map as a comparison to potential scenarios. Credit: Student group

SCENARIO 1: BUSINESS AS USUAL (TREND)

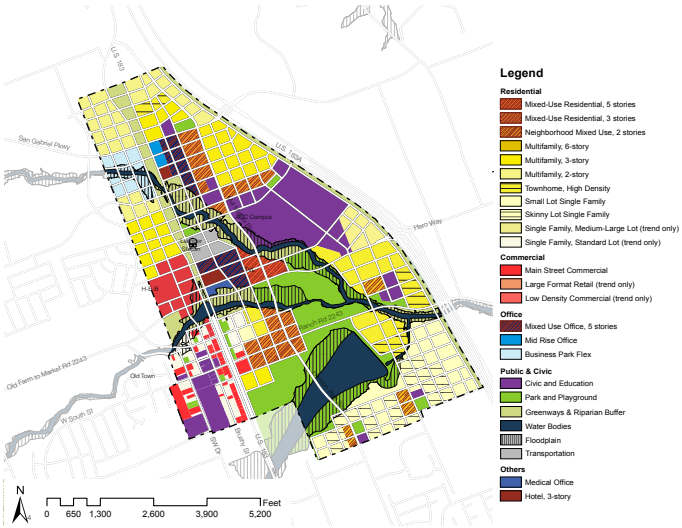
The trend scenario assumes that the current trends in Leander will continue until 2030, the target year for this report. Evident from the population, housing units, and jobs provided in the TOD district, the trend scenario is not sustainable. It is costly, will result in underutilization of land around the transit station and new San Gabriel campus, and will strain current resources.



Scenario 1: Business as usual land use map. Credit: Student group

SCENARIO 2: TRANSIT ORIENTED

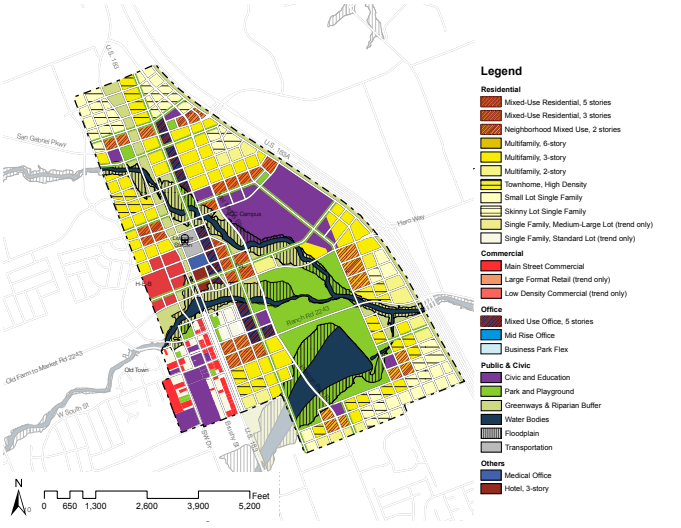
Under a TOD scenario, Leander is a regional center for education and culture, a vibrant node within the Capital region's broader network of distinctive destinations.



Scenario 2: Transit oriented land use map. Credit: Student group

SCENARIO 3: HIGH SUSTAINABILITY

In a high sustainability scenario, Leander is a vibrant city of small, distinctive neighborhoods, excellent educational amenities, and ample green space.



Scenario 3: High sustainability land use map. Credit: Student group

SMART + RESILIENT LEANDER

STUDENTS

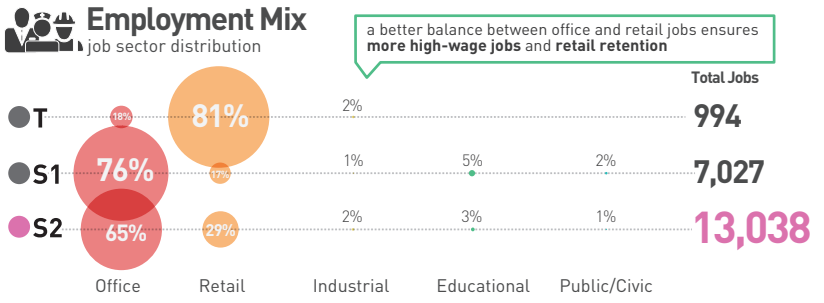
Anna Lake-Smith
Jose Latorre
Farzad Mashhood
Stephen Sharpe

In looking at Leander's current trend, if today's market were to continue, unguided, it would produce a city oversaturated with single-family housing, with little regard to larger community needs or ecological concerns. The following scenarios will be compared against this baseline to evaluate success and viability.

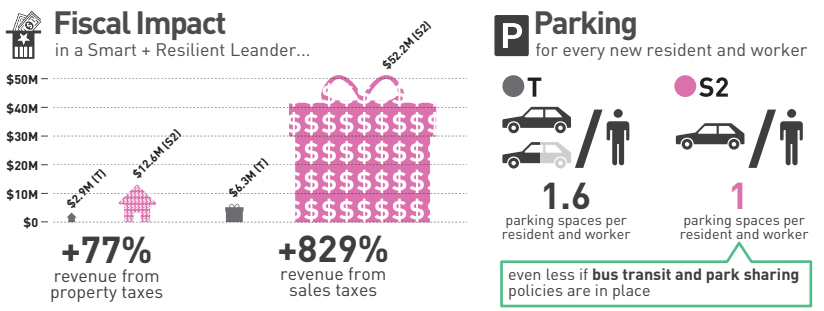
SCENARIOS 1 AND 2

This group created Scenario 1, which illustrates Leander's existing comprehensive plan, Destination Leander. While Destination Leander (Scenario 1) follows the comprehensive plan in its emphasis on the development of commercial and mixed-use corridors, Scenario 2 (Smart + Resilient), promotes a pattern of development around places, not corridors. Expanding corridors are inefficient in providing services and put economical and infrastructure resilience at risk. Instead, places are centers of mixed-uses and walkable spaces. They promote shared services and efficiency of commercial supply.

Scenario 2 centers mixed-used around five places in the site and connects them through Brushy Creek Park and Trail.



Comparison of employment mix between trend (T), Scenario 1 (S1), Scenario 2 (S2) Credit: Student group



Fiscal impact from potential taxes, and parking reduction consequence. Credit: Student group

PLANNING OUTCOMES

In Destination Leander, one goal is to make Leander "a destination for employers and commerce," while Smart + Resilient Leander also focuses on Leander to be a destination for "innovative and progressive employers."

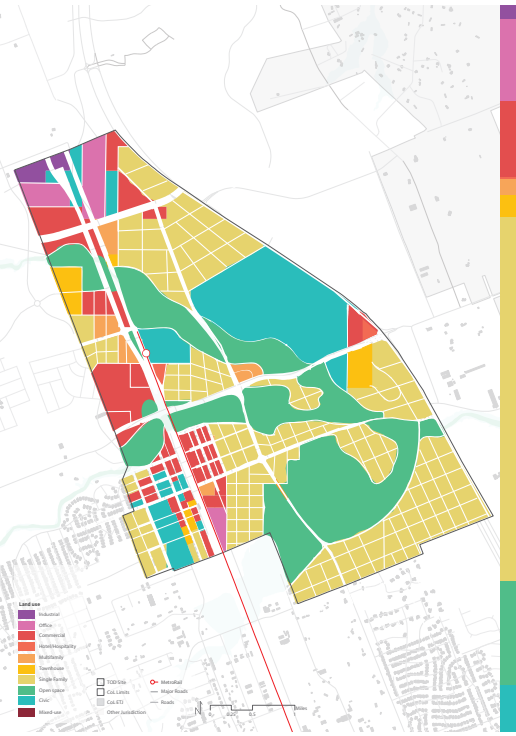
Another economic goal in Destination Leander is for the TOD and Old Town to be "a 24/7 district." This vision is extended in Smart + Resilient Leander, imagining the TOD and Old Town as a "live/work/play district." This is interpreted as meaning more money to the city's bottom line in sales and property tax revenue. The outputs for Smart + Resilient Leander show a substantially higher tax revenue in both sales and property taxes. Additionally, using current parking requirements, we were able to reduce the per capita number of parking spaces by having denser development in Smart + Resilient Leander, freeing up more land for other uses. Reduced parking requirements can push this even lower.

Scenario 1: Destination Leander

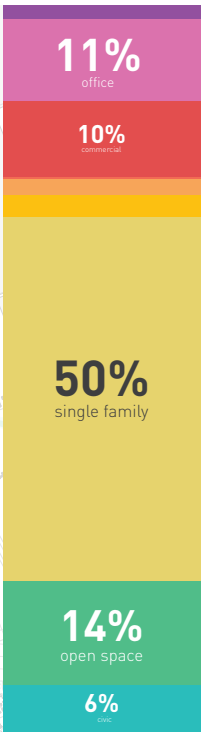
Planning outcomes
corridors and expansion

Population new residents	**6,309**
Housing Units in TOD Site	**3,069**
HH Size average	**2.22**
No. of Jobs in TOD Site	**7,027**
Own-Rent Mix of new housing	**83/17**
Property Tax Revenue	**$6.4 M**
Sales Tax Revenue	**$18.6 M**
NEW SCHOOLS (school aged children / avg. children per school TX)	**1**

Land use map

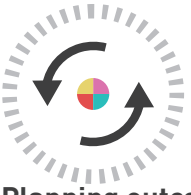


Land use stack



Scenario 1: Existing vision land use map. Credit: Student group

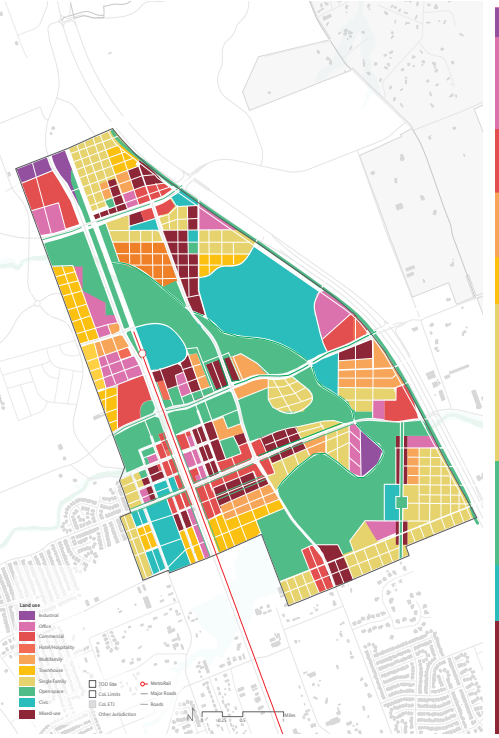
Scenario 2: Smart + Resilient



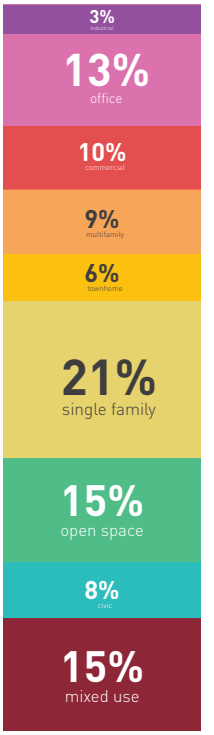
Planning outcomes
creating places

Population new residents	**12,275**
Housing Units in TOD Site	**6,675**
HH Size average	**1.96**
No. of Jobs in TOD Site	**13,038**
Own-Rent Mix of new housing	**43/57**
Property Tax Revenue	**$12.6 M**
Sales Tax Revenue	**$52.2 M**
NEW SCHOOLS (school aged children / avg. children per school TX)	**2**

Land use map



Land use stack



Scenario 1: Proposed scenarios map. Credit: Student group

According to Vishaan Chakrabarti, author of *A Country of Cities*, the minimum housing density to support rail-based transit is 30 units per acre. At 30 units per acre, there is enough demand for rail to justify the costs, and there are enough amenities in the area to draw in residents and jobs.

Destination Leander has a housing density of 12 units per acre, making it a prime area for bus-based transit. In order to make better use of the existing MetroRail line that terminates in Leander, Smart + Resilient Leander wants to reach the crucial 30 units per acre metric.

Source: Chakrabarti, Vishaan. (April 2013). A Country of Cities: A Manifesto for an Urban America. Metropolis Books.

2. NEW HOUSING DEVELOPMENT MODELS FOR LEANDER

COURSE

REAL ESTATE DEVELOPMENT
School of Architecture, Community and Regional Planning Program
Assistant Professor
Jake Wegmann, Ph.D.
Spring 2016

Leander's rapid population growth and demographic change requires an understanding of how real estate can be developed sustainably. The majority of Leander's residential housing stock is single-family. Increasingly dense typologies are needed to serve incoming residents and maintain affordability throughout the community.

Students in Real Estate Development researched and evaluated the feasibility of sustainable residential development types. Typologies include cohousing, live/work, small multifamily, fourplexes, and townhouses. Working in small groups, each research team developed a 15-20 page report that examines a different housing type. Final reports included case studies or precedents from other cities in similar regions and feasibility determinations generated through data analysis and discussions with developers, engineers, planners, and other relevant professionals. This section highlights the main points from each of the reports.

Row homes in Austin's Mueller development.
Credit: Texpert Homes of East Austin, Rebecca Kohout.

COHOUSING

STUDENTS

Robert Anderson
Jonathan Batista
Annie Boggs
Doug Norman

Emerging in 1980s Denmark, cohousing is a form of intentional community that seeks to balance privacy and community. Typical features include clustered inward-facing structures with a shared open space in the center and parking along the perimeter of the development. Many of these developments contain a mix of housing types such as duplexes, fourplexes, rowhouses, and smaller multifamily apartment buildings. That mix of housing, in turn, results in a diversity of income levels, ages, families, and single people who may want to have their own living space but still enjoy being around other people.

Southside cohousing community in Sacramento, California. Courtesy: Randy Pench of the Sacramento Bee

The construction of more than 7,000 homes in Leander is expected over the next five years. With a median age under 32 and a rising number of residents under the age of 18, it's clear that young families with children are moving into the city. Drawn by affordability, safety, and strong schools, these young families with children are one of the target markets for cohousing. Such families seek such living arrangements in part because they offer opportunities to share responsibilities for childcare and nearby playmates for the kids.

Currently, there are technical challenges Leander needs to address in order to introduce cohousing. Finding the right developer is one issue. The participatory process necessary to build cohousing projects can prolong the project and might not be appealing to developers. Financing is another barrier. Pre-construction development costs to fund the participatory process is not widely available. Additionally, the housing product type is unfamiliar to lending institutions, and therefore, makes securing a construction loan complicated.

Finally, zoning is a barrier for cohousing projects because the form and density needed, as well as land use, do not comply with either Leander's SmartCode or Composite Zoning Code. SmartCode's level of development would not accept cohousing in the TOD because couhousing falls short of the TOD's desired density. Composite Zoning Code relies on minimum lot size requirements and single-family's separation of land uses. While cohousing can be defined as multifamily use, board and councils might not trust a developer's commitment to the original cohousing project proposal once zoning is approved.

RECOMMENDATIONS

1. Create a cohousing toolkit and directory of local supportive consultants and financial institutions.
2. Designate a cohousing point person within city staff responsible for answering questions pertaining to procedural or regulatory issues in cohousing development.
3. Amend Composite Zoning Code to reflect a clustered housing use.

LIVE/WORK HOUSING

STUDENTS

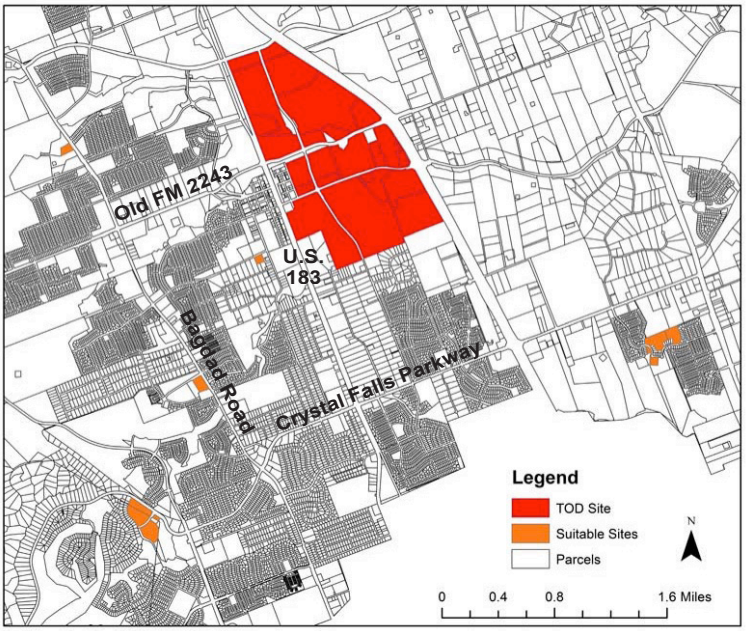
José Guerra
Leigh Raderschadt
Stephen Sharpe

Live/work housing consists of units in which a residential and commercial space are both located on the same parcel and rented or owned by one occupant. This type is also known as zero commute housing because there is no need to commute between home and work. It is flexible both in where it can be located throughout the community and how it can be utilized.

Among the numerous benefits live/work housing provides, the most obvious and important one is eliminating the need for residents to commute between home and work. By commuting to work, the typical American spends an average of 24.2 minutes traveling each way to and from their workplace. Residents of live/work housing save not only time, but also the cost of fuel and car maintenance. The city and region also benefit from fewer vehicles on the road.

Three case studies are identified to demonstrate the effectiveness of live/work housing: Pacheco Street Lofts in Santa Few, New Mexico, Spaces 2525 in Austin, Texas, and The Arcade Providence in Providence, Rhode Island. These case studies illustrate different building types of live/work units including, "live-with," "live-near," and "live-nearby."

LIVE WORK SUITABLE SITES MAP



Suitable sites in Leander for live/work housing. Credit: Student group

Offering convenience and affordability, all are deemed successful primarily because of their direct access to public transit.

Leander could benefit from including live/work units as part of its housing density strategy by locating higher density units close to the Leander station. This would include a substantial amount of live-near developments. Smaller live-near and live-with developments could also be housed along arterial streets further away from the transit station. Other areas suitable for smaller live/work units include such higher trafficked streets designated as mixed-use corridors as U.S. 183, Bagdad Rd, Crystal Falls Parkway, and Old FM 2243. Please see the above suitability map that identifies potential existing sites along these corridors.

Spaces 2525 in Austin, Texas. Courtesy: Antenora Architects

SMALL MULTIFAMILY RESIDENTIAL

STUDENTS

Niloufar Karimipour
Nathalie Kip
Corey Rothermel
Evan Tenenbaum

Small multifamily residential projects are reminiscent of historical development patterns in the sense that these products are often integrated alongside single-family homes in urban neighborhoods. Defined as - "a medium structure that consists of five to ten side-by-side and/or stacked dwelling units, typically with one shared entry or individual entries along the front," small multifamily developments as part of a rental market can capture a different target market than for-sale units. This section presents several case studies of small multifamily residential success stories around the nation, and recommendations for locations to include new zoning within Leander where this building type can be located.

With a median age of 31.4 years, a majority of Leander's population falls under the millennial generation. Within the target millennial group, two subgroups have been identified and considered for small multifamily housing: community college students likely to attend the ACC San Gabriel Campus, and recent postsecondary graduates. Working class and older generations are two more demographic groups selected as potential audiences for this housing type.

The three case studies selected illustrate different development scenarios Leander can incorporate in its existing form. Looking at Town Creek, in New Braunfels, Texas, Union 4 in San Diego, California, and Oslo in Washington, DC, all three case studies offer lesson on housing techniques that have successfully attracted the millennial demographic through modern or unique housing conditions and design, multigenerational living options, and connection to surrounding neighborhoods.

RECOMMENDATIONS

1. In using SmartCodes' Transect Zones, allocate small multifamily housing in the city's T4, General Urban Zone, or the T5, Urban Center Zone transects.
2. Update multifamily zoning categories to create one that fits in between single-family and multifamily and acts as a transitional residential building zone (1-10 dwellings on a lot with a density limit of 20-50 dwellings/unit per acre).
3. Planning for small multifamily residential buildings should begin now, concurrent with the

Small multifamily developments such as Town Creek in New Braunfels, Texas, offer connections to surrounding neighborhoods. Courtesy: Jurica Builders

FOURPLEXES

STUDENTS

Kristen Hotopp
Anna Lake-Smith
Farzad Mashhood
Samy Moskol

If Leander is to reach its goal of 20 percent "mixed" housing, meaning housing that is not detached single-family, the city must consider a wider range of housing types beyond what is largely found today: large apartment complexes and single-family subdivisions. While Leander's current comprehensive plan makes room for fourplexes, or quadplexes, this section's goal addresses logistical questions about how to develop this housing type in order to promote it as a viable development option.

RECOMMENDATIONS

1. Create a fourplex zoning category that is less dense than multifamily with a minimum lot size that allows a maximum of four attached units on a lot.
2. Write design standards to ensure compatibility between fourplexes and similar-looking suburban homes.
3. Market to millennials and baby boomers, demographic groups who prefer more denser living arrangements.

TOWNHOUSES

STUDENTS

Jolene Holland
Vanessa Mendez
Sam Naik
Lauren Osborne

Townhouses, sometimes referred to as rowhouses or terraced homes, are typically defined as three or more houses that are attached by shared structural walls. Townhouses typically have multiple stories, with two to four stories and are targeted primarily to young singles and couples, families, and empty-nesters and retirees looking to downsize. Fortunately, Leander's Composite Zoning Ordinance welcomes townhouses through Single-Family Townhouse and Multifamily zoning. Additionally, townhouses' flexibility in shape and function means they can easily fit within both the Traditional Neighborhood Development and Regional Center Development units.

RECOMMENDATIONS

1. Consider the success of The Cedar Park Town Center case study in Cedar Park, Texas.
2. Price townhouses lower than single-family homes to entice buyers.
3. Use locally resonant architectural styles to help maintain the city's existing character.
4. Locate within the TOD for a more walkable and dense community environment.

Rendering of what Leander's future could look like with fourplexes. Credit: Anna Lake-Smith

3. LOCAL FISCAL MODEL OF DEVELOPMENT SCENARIOS

COURSE

FINANCING PUBLIC SERVICES
School of Architecture, Community and Regional Planning Program
Associate Dean
Michael Oden, Ph.D.
Fall 2015

Students explored the specific institutional, tax and spending challenges associated with managing growth and supporting more sustainable development paths for Leander, Texas. As a core case study, students analyzed ways to estimate the fiscal impacts of different development forms and the broader "costs of growth" within the City of Leander.

The Local Fiscal Impact Model (LFIM), developed by Dr. Oden, was used to evaluate the fiscal impacts of three distinct development scenarios. The modeled scenarios were linked to the Envision Tomorrow planning software, also used in the Sustainable Land Use Planning course. Student analysis and reports will enable the City of Leander to better determine specific costs and benefits associated with development patterns.

The Mueller development in Austin, Texas offers a variety of dense residential and mixed-use options. Credit: Garreth Wilcock, Flickr

OVERVIEW + LEANDER SCENARIO 1

The class research team at University of Texas at Austin in the fall 2015 Community and Regional Planning course, Financing Public Services, developed a model for the City of Leander and the Leander Independent School District to evaluate the fiscal impacts of various development scenarios. This "fiscal app" can be linked to the Envision Tomorrow (ET+) scenario planning system. The fiscal impact tool is based on specific detailed data developed at the local jurisdiction level (city governments, school districts, and public utility districts). Some data needed to support our local fiscal impact model (LFIM) are derived from national data sources (e.g., U.S. Census), but a majority of the needed baseline information is derived directly from Leander local budget documents, property appraisal data, and service surveys from local government departments.

The LFIM model is a means to compare the tax revenues and expenditure demands associated with "business as usual" development with one or multiple alternate development scenario(s). However, the results of the LFIM application are rough approximations, and a more careful, project specific assessment may be needed to generate more precise estimates of fiscal effects of larger projects. Furthermore, as with any model estimating local fiscal impacts, it is critical to clearly understand the assumptions and limitations of the model and estimates. For more information on the LFIM model, please visit the following webpage on UTSOA's website: https://soa.utexas.edu/work/sustainable-places-project

SCENARIO 1: SUBURBAN RESIDENTIAL SUBDIVISION

In the first scenario we assumed that all 100 acres would be developed as single family residential housing (a large residential subdivision). In this scenario there would be approximately 818 residential units on the site. Average household size would be 3.6 and the new development would house roughly 2,946 residents. There would be no commercial activities supporting workers on the site in this scenario.

Crystal Falls subdivision in Leander is an example of how scenario 1 would look like. Courtesy: Austin Business Journal

LEANDER SCENARIO 1: SUBURBAN RESIDENTIAL SUBDIVISION

CITY OF LEANDER, INCLUDING WATER/WASTEWATER UTILITY

	Residential	Non-Residential	Net Total
Annual Revenues	$3,182,957	$0	$3,182,957
Annual Expenditures	$3,501,509	$0	$3,501,509
Revenue/Cost Ratio	0.91	0.00	0.91
Net Annual Revenue (Cost)	-$318,552	$0	-$318,552
Analysis Period, Years	20	20	20
Cost of Capital @	3.50%	3.50%	3.50%
Present Value of Net Revenue (Cost)	-$4,527,387	$0	-$4,527,387

LEANDER ISD K-12 SCHOOLS

	Preferred Estimate		
	Residential	Non-Residential	Net Total
Annual Revenues	$1,478,776	$0	$1,478,776
Annual Expenditures	$4,325,634	$0	$4,325,634
Revenue/Cost Ratio	0.34		0.34
Net Annual Revenue (Cost)	-$2,846,858	$0	-$2,846,858
Analysis Period, Years	20	20	20
Cost of Capital @	3.50%	3.50%	3.50%
Present Value of Net Revenue (Cost)	-$40,460,694	$0	-$40,460,694

AGGREGATE ESTIMATE: CITY OF LEANDER, LEANDER WATER/WASTEWATER SERVICES, LISD K-12

	Preferred Estimate		
Items	Residential	Non-Residential	Net Total
Annual Revenues	$4,661,733	$0	$4,661,733
Annual Expenditures	$7,827,143	$0	$7,827,143
Revenue/Cost Ratio	0.60	0.00	0.60
Net Annual Revenue (Cost)	-$3,165,410	$0	-$3,165,410
Analysis Period, Years	20	20	20
Cost of Capital @	3.50%	3.50%	3.50%
Present Value of Net Revenue (Cost)	-$44,988,081	$0	-$44,988,081

RESULT

Allocating 100 acres of land completely to suburban "tract houses" development would result in a **significant net fiscal loss** to the City and School District. Residents contribute less revenue to city services than its costs to provide city and water/wastewater services. When combining the net fiscal deficits for the City and the LISD, a pure residential development scenario would yield a net annual fiscal **deficit of over $3.16 million**.

LEANDER SCENARIO 2: CONVENTIONAL RESIDENTIAL AND COMMERCIAL DEVELOPMENT SCENARIO

SCENARIO 2: CONVENTIONAL RESIDENTIAL AND COMMERCIAL DEVELOPMENT SCENARIO

In our second scenario we assumed that the 100 acres would be developed with separated mixed uses that are broadly consistent with development patterns currently seen in Leander. We allocate 70 percent of the site for conventional owner-occupied housing development and 30 percent for commercial uses. Retail along an existing road corridor (strip) is the lion's share of non-residential development, but we also assume five acres will be used for restaurant or related uses and five acres for conventional office (3 stories). In terms of square footage of building structures, 58.3 percent would be conventional medium lot housing and 41.7 percent would be all non-residential buildings.

SCENARIO 2: DEVELOPMENT LAND USE MIX

Development Type	Land Use %
Strip Retail (1 story)	20.0%
Restaurant (1 story)	5.0%
Office (3 stories)	5.0%
Single Family Medium Lot (2 stories)	70.0%
Sum	100%
Dev Type Footprint	%
Residential Percent Sq. Footage	58.3%
Nonresidential Percent Sq. Footage	41.7%

In this plan, there would be approximately 573 residential units and 2,062 residents. Commercial activities proposed for this scenario would generate close to 1,700 workers in the various activities. It is important to note that this scenario produces a higher commercial residential mix than what is currently present in the City of Leander as a whole.

AGGREGATE ESTIMATE: CITY OF LEANDER, LEANDER WATER/WASTEWATER SERVICES, LISD K-12

	Preferred Estimate		
Items	Residential	Non-Residential	Net Total
Annual Revenues	$3,263,213	$4,070,262	$7,333,475
Annual Expenditures	$5,479,000	$1,439,351	$6,918,351
Revenue/Cost Ratio	0.60	2.83	1.06
Net Annual Revenue (Cost)	-$2,215,787	$2,630,911	$415,124
Analysis Period, Years	20	20	
Cost of Capital @	3.50%	3.50%	
Present Value of Net Revenue (Cost)	-$31,491,657	$37,391,568	$5,899,912

RESULT

For the City of Leander this scenario yields and net annual **fiscal gain of close to $945,000**. While this scenario still generates a net fiscal deficit for the LISD, it is much closer to balance than in Scenario #1 because of the school property tax contributions coming from the non-residential land uses. This separated mixed land use scenario would yield a net annual fiscal surplus of about $415,000. If we considered the aggregate fiscal implications over a 20 year project lifespan, the net surplus (in discounted present value terms) would mount to almost $5.9 million.

LEANDER SCENARIO 3: CONTEMPORARY MIXED-USE DEVELOPMENT WITH MORE HOUSING DEVELOPMENT MIX

SCENARIO 3: CONTEMPORARY MIXED-USE DEVELOPMENT WITH MORE DIVERSE HOUSING MIX

In the third scenario the class considered a more integrated mixed-use development that references the Mueller (Airport) redevelopment in Austin and larger master planned or planned unit development communities in other suburban jurisdictions.

SCENARIO 3: DEVELOPMENT LAND USE MIX

Development Type	Land Use %
Strip Retail (1 story)	10.0%
Restaurant (1 story)	5.0%
Town Center Retail (2 stories)	10.0%
Hotel (3 stories)	5.0%
Office (4 stories)	5.0%
Condo (2 stories)	3.0%
Single Family Medium Lot (2 stories)	42.0%
Row House - Large Lot (2 stories)	15.0%
Row House - Medium Lot (2 stories)	5.0%
Sum	100.00%
Dev Type Footprint	%
Residential Percent Sq. Footage	50.7%
Nonresidential Percent Sq. Footage	49.3%

The residential elements of this development would be both more diverse and compact. In this scenario there would be 848 housing units and approximately 3,017 residents. The number of units and residents in this scenario exceed the number in the pure "tract housing" model in the first scenario. The City could accommodate more residents while retaining a very high commercial mix on the 100 acre site.

AGGREGATE ESTIMATE: CITY OF LEANDER, LEANDER WATER/WASTEWATER SERVICES, LISD K-12

	Preferred Estimate		
Items	Residential	Non-Residential	Net Total
Annual Revenues	$4,549,621	$7,008,737	$11,558,358
Annual Expenditures	$8,016,598	$1,996,484	$10,013,083
Revenue/Cost Ratio	0.57	3.51	1.15
Net Annual Revenue (Cost)	-$3,466,977	$5,012,253	$1,545,276
Analysis Period, Years	20	20	
Cost of Capital @	3.50%	3.50%	
Present Value of Net Revenue (Cost)	-$49,274,073	$71,236,156	$21,962,083

RESULT

For the City of Leander this scenario yields and net annual **fiscal gain of close to $2.2 million**. If we considered the aggregate fiscal implications over a 20 year project lifespan, the net surplus (in discounted present value terms) would mount to almost $22 million. The fiscal analysis of this scenario suggests that TOD type development or larger master planned developments would contribute to the fiscal health of the City.

4. RETHINKING THE EDGE CITY OF LEANDER

COURSE

URBAN DESIGN STUDIO
School of Architecture, Urban Design Program
Associate Professor
Dean Almy
Fall 2015

Leander, Texas faces sustainability challenges associated with an increased demand for suitable urban housing and community amenities. Population growth and demographic change will impact Leander's physical landscape and give new identity to the concept of density within the city. In this course, students explored Leander's increasingly urban landscape in an effort to construct a new set of flexible and individualized design models that guide current and future growth. In doing so, they investigated the relationship between spatial and technical urbanism, physical orders established by urban and landscape systems, and strategies for producing new urban landscapes. By considering Leander's current and future context, the studio developed a series of urban design scenarios that respond to the community's changing structure.

Bagby Street in Houston, Texas is an example of a transformed district into a pedestrian-oriented, mixed-use neighborhood.

STRATEGIES FOR LEANDER

STUDENTS

Aparajita Bhatt
Adam Barrett
Jake Chavez
Ashwin Dharmadhikari
Jessie Ho
Lu Jiang
Shuo Li
Louis Rosner
Sijin Sun

- Density
- Mobility
- Landscape

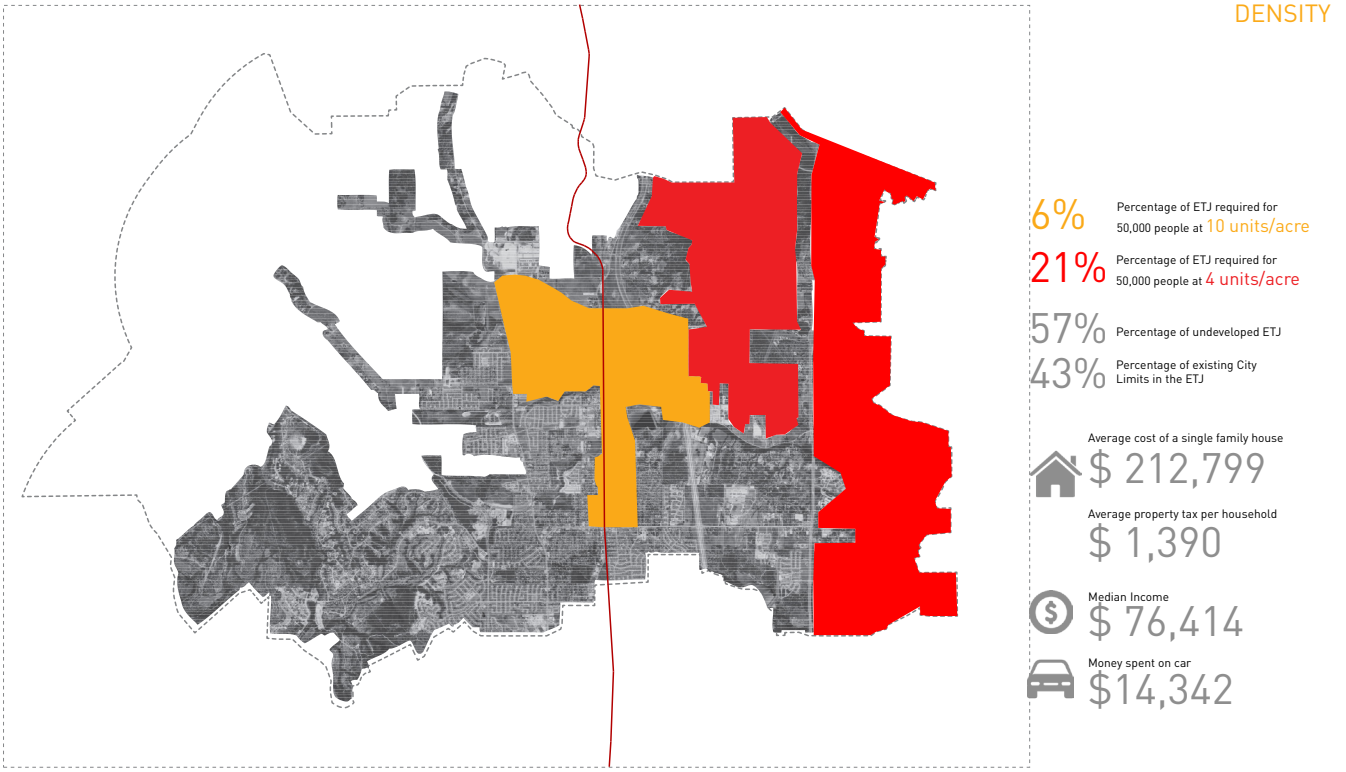
STRATEGIES FOR LEANDER

- Reparcelize existing land to achieve greater density.
- Allow for greater diversity of housing choices.
- Integrate the historic town center into the proposed urban fabric.
- Scale new development to transition from urban corridors to existing neighborhoods.
- Encourage mixed-use development.

- Conserve and enhance existing ecological corridors.
- Provide for a low impact development infrastructure.

- Transform existing water retention pond into the new central park.
- Create a diversity of public spaces to support the urban life.

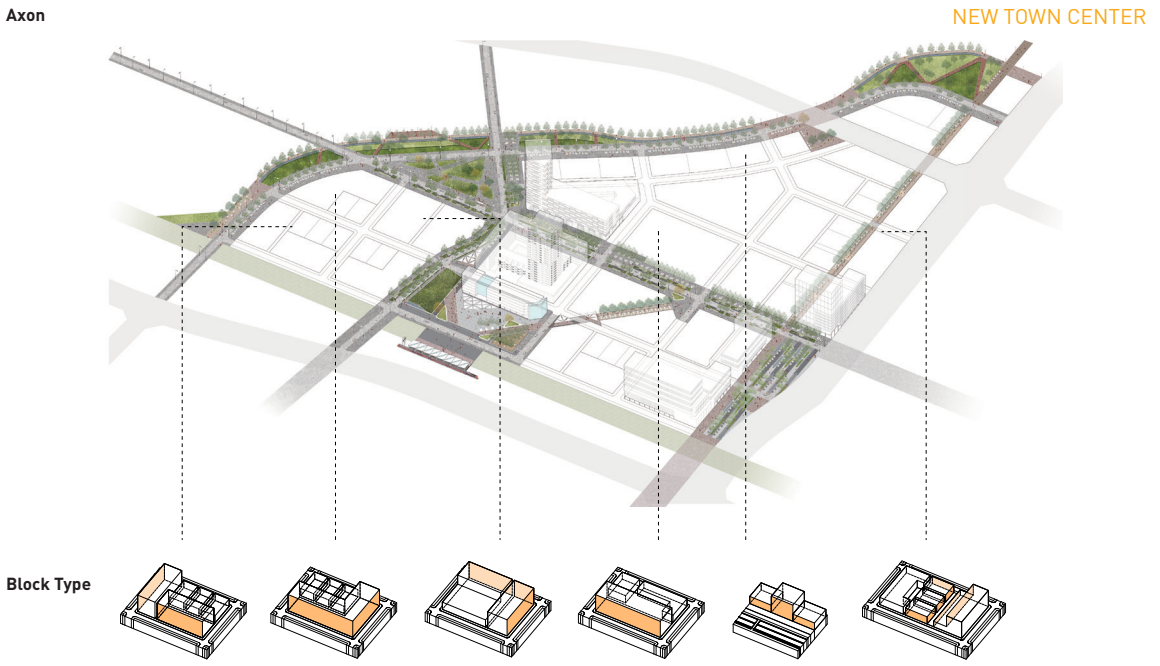
- Redesign U.S. 183 and Hero Way in accordance with complete street standards.
- Use the existing Red Line terminus as the central catalyst for new development.
- Create new circulator routes to connect existing and proposed development to the red-line.
- Create walkable urban neighborhood supported by pedestrian and bicycle infrastructure.



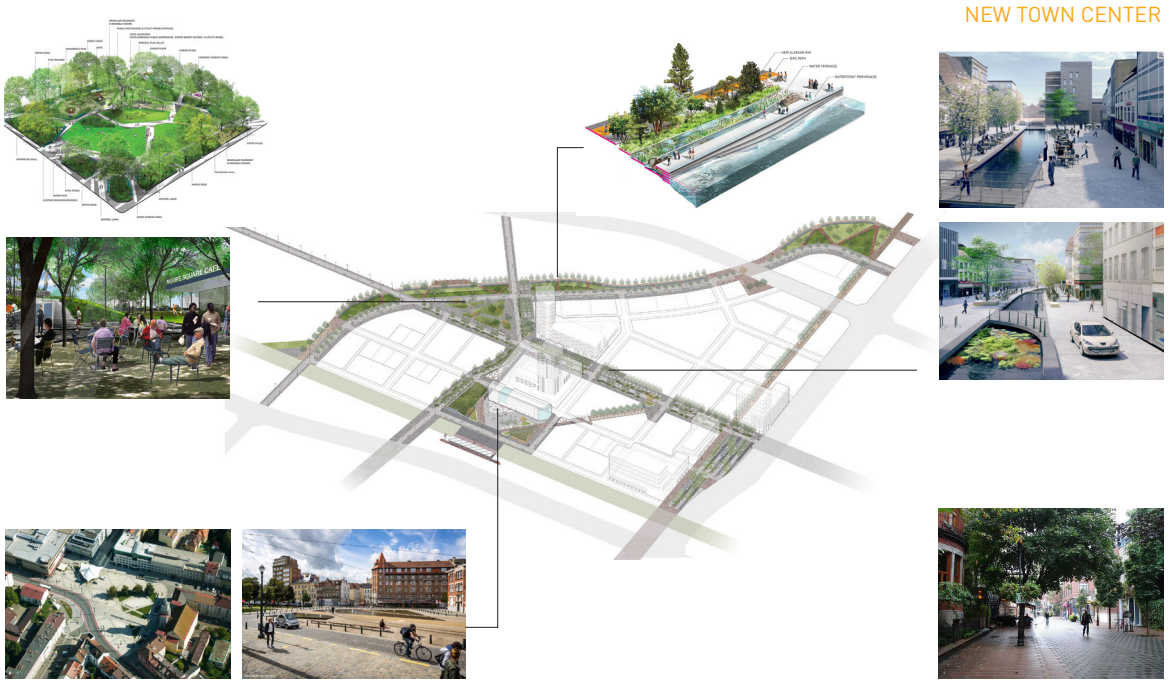
Existing conditions map that illustrates the current effects of density on Leander.
Credit: Student group

NEW TOWN CENTER

Each student was designated an area of focus to provide concepts on how Leander can define existing space and land. Creating a new town center was one initiative that was addressed. Using alternative block types and precedents from other places, these concepts demonstrate how Leander can create a community gathering place.



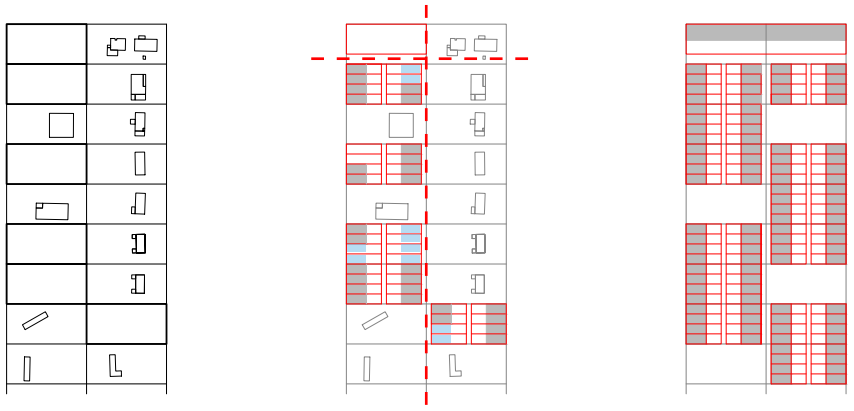
Suggestions of block types and building placements to make a more compact and connected town center. Credit: Student group



Precedents of what segments in the new town center can potentially look like. Credit: Student group

LAND DIVISION

One challenge Leander faces is a best way to divide and develop existing land. Looking at plots West of U.S. 183, a land division strategy can help provide density and sustainable growth.



Exising land parcelisation :

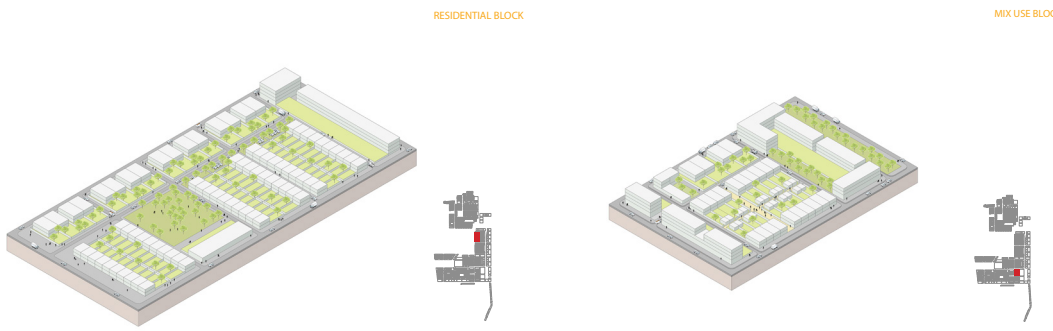
- 100 x 200 lots
- random siting of building on parcels
- 18 housing units

= oversized blocks prevent any sort of density
= no edge to the street

Phase 1 : use the available land and divide lots but don't build on every new parcel : empty lots will be used as temporary parking as the rest of the block is completely sold

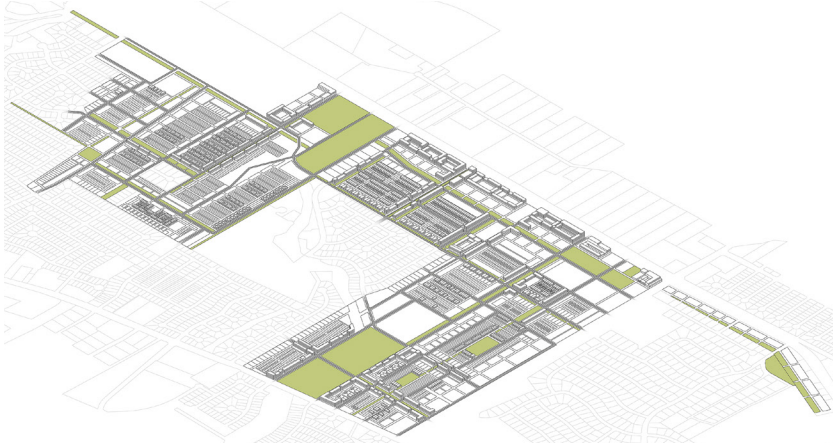
Phase 2 : complete the whole block
- 108 housing units (96 row houses and 12 appartments

Potential phasing of land parcelisation. Credit: Student Group



Diagrams of residential and mixed-use blocks. Credit: Student Group

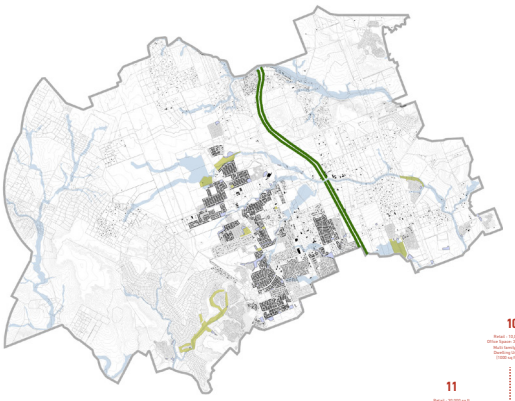
AXONOMETRIC VIEW



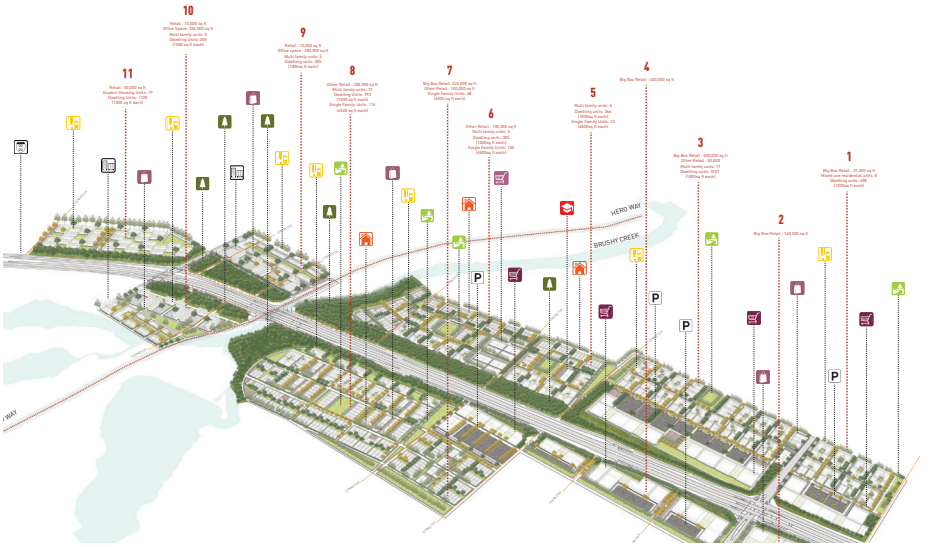
View of all block sizes and types. Credit: Student Group

GREEN INFRASTRUCTURE + CONCLUSION

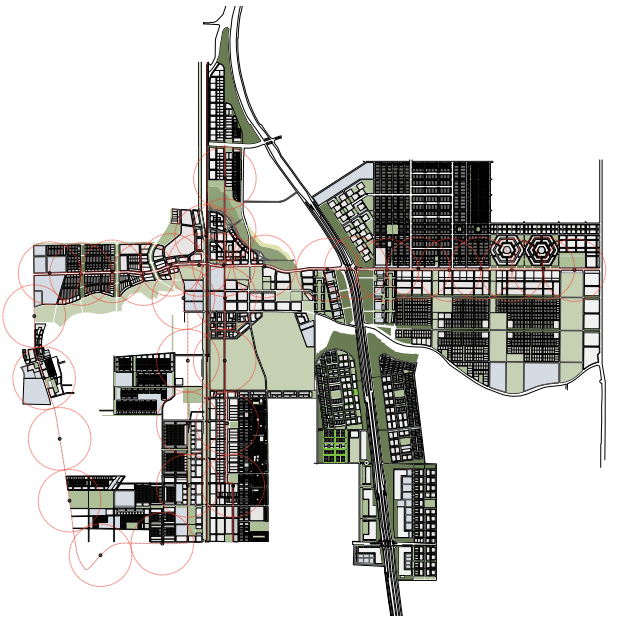
An alternative use for U.S. 183A Toll Road is to transform it into a Green Line, or an ecological corridor. The Green Line can serve as a place for habitat protection, conservation buffer, and flood retention.



Map of U.S.183A as a Green Line. Credit: Student group



Proposed ecological corridor with recommended land use options. Credit: Student group



PEOPLE - 27,737

JOBS - 31,729

HOUSING UNITS - 9,962

AVERAGE DENSITY - 5.85 units/acre

AREA - 1,702.79 acres

The result of increasing density and reparcelising suggested land can effectively create more housing and employment opportunities for Leander's future population.

The density outcome of the students' proposed new town center, street and transit network (not shown in this report), land division, and a green line. Credit: Student group

5. CATALYZE + CONNECT

COURSE

ADVANCED ARCHITECTURAL DESIGN: COMP STUDIO
School of Architecture, Architecture Program
Associate Professor
Matt Fajkus
Fall 2015

Student teams engaged a mixed-use design project at one of three specific sites in the City of Leander: Historic Downtown, TOD Red Line Station, and Central East. The architectural design project developed built spaces that speak to the community's current and future identity.

The project initiated with a research component to generate links between site and mixed-use program. A schematic design was produced in model and 2D drawing formats, followed by design development with 3D components, and a sampling of detail drawings. Projects integrated technical building issues with presentation and construction documents. The final product produced by each student team included a presentation and construction package that combined all aspects of their design. Leander can use these architectural projects to visualize how community building might be strengthened through physical structure. While there were seven presented reports which have all been submitted to the City of Leander, this report highlights only one: Catalyze + Connect created by Kendall Claus and Amy Payton.

Rendering of proposed Cultural/Community Center.
Credit: Kendall Claus and Amy Payton

CATALYZE + CONNECT

STUDENTS

Kendall Claus
Amy Payton

One of the fastest growing cities in the nation, Leander is currently in the initial stages of developing a model for responsible and sustainable growth. Creating a framework within the urban core that encompasses the goals and needs of the city can be used as a catalyst for future growth and a means of connecting existing surrounding nodes. An integral part of this framework includes establishing a Cultural/ Community Center, including flexible indoor and outdoor spaces that cater to the demographics within Leander. Connecting the city back to its core and providing a place for incubation and celebration of Leander's identity will help re-instill pride in the community and its Texas roots while providing a clear vision for the potential of what lies ahead.

This scheme proposes both a densification and diversification of program beginning in Old Town. A master plan was developed to show how a cohesive urban identity can occur through the implementation of natural, pedestrian, and transportation corridors. These corridors help form a foundation for responsible development.

SITE ANALYSIS

{EXISTING}

- City Hall
- Municipal Hall
- Chamber of Commerce
- Historical Committee
- Bar
- Restaurants
- Single Family Residences
- LISD Administrative Headquarters
- Convenience Store
- Middle School
- Bank
- Church

civic
residential
service
food & drink
education

{PROPOSED}

- Higher density
- Development of corridors
- Consolidation of existing municipal buildings
- Movement of single home residences out of Old Town
- Use the multipurpose activities center as a catalyst for redevelopment of Old Town and a connector to existing program

civic
residential
service
food & drink
education

GOALS


Create a model for responsible and sustainable growth


Focus on the pedestrian


Link generations and demographics


Connect Old and New


Regenerate culture and community


Generate activity


Address need for flexibility


Create enjoyable spaces


Respect Leander's history


Boost identity and instill pride

MASTER PLAN

{FUTURE GROWTH}

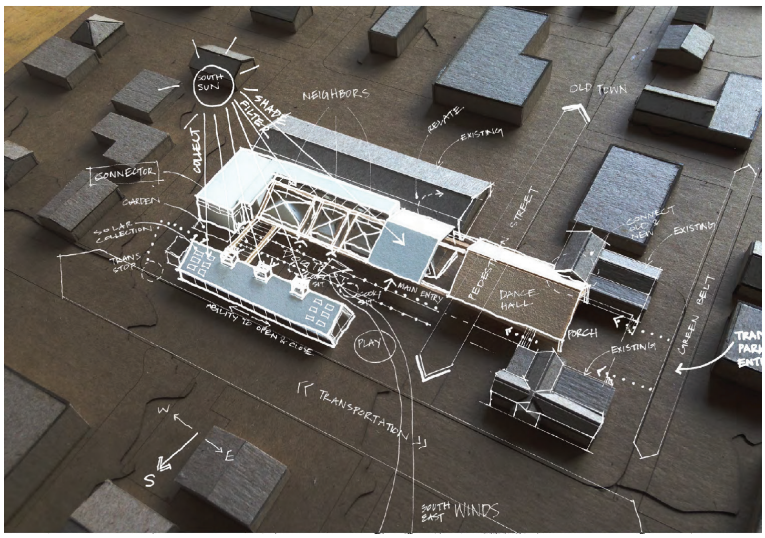
Master plan of site with potential growth.
Credit: Kendall Claus and Amy Payton

REINVENTING BRUSHY STREET

Development of the three proposed corridors will be divided into three phases over time. The first phase includes reinventing Brushy Street into a pedestrian realm. This pedestrian street would serve as the spine of Old Town, from which commercial growth would inevitably occur. Future phases include the construction of a Community/Cultural Center at the corner of Brushy and South Street and integration of a variety of residential types.

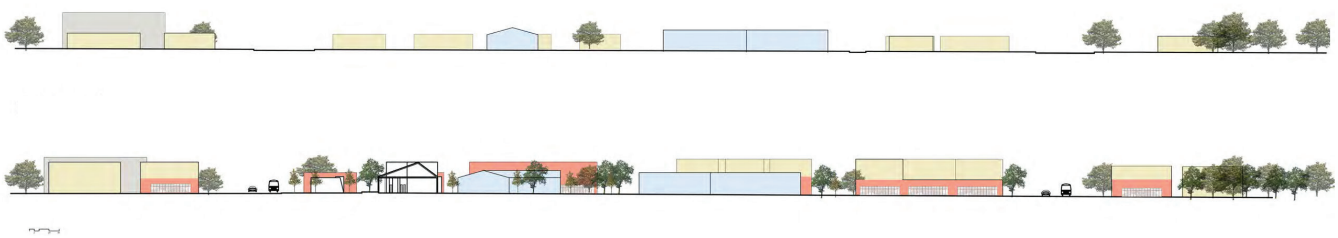
The placement of this proposed Cultural/ Community Center ensures the catalyzation of activity in Old Town with its presence at a junction between education, municipal, residential, and commercial nodes. Most importantly, the location presents an opportunity to set an example for a responsible solution to integrating new infrastructure within the existing grid.

SITE STRATEGIES

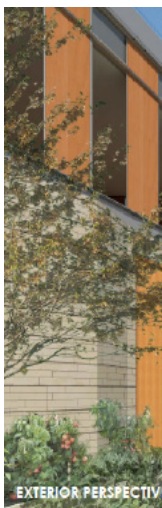


Site strategies and initial plan for the Cultural/Community Center.
Credit: Kendall Claus and Amy Payton

{SITE SECTION}



Site section of existing Brushy Street demonstrating proposed changes.
Credit: Kendall Claus and Amy Payton



Clockwise, First Photo: Exterior perspective from the east.
Second Photo: Pop-up shop.
Third Photo: Interior perspective of the classroom.
Fourth Photo: Exterior perspective of the dance hall.
Credit: Kendall Claus and Amy Payton

THE CULTURAL/COMMUNITY CENTER

Activity in the Center occurs within three main buildings, providing community spaces, areas for food and drink, flexible spaces, offices, and service zones. These spaces provide a solution to economic growth in many ways. Flexible spaces allow for the possibility of pop-up shops to maneuver a movable wall system that best suits their shop's preferences. These pop-up shops will help generate commercial activity in Old Town. Income generated from groups renting community spaces will help in the maintenance of the Center. Office space will provide options for startup companies, which can ultimately attract businesses into Leander.

All three buildings are connected via circulation as well as through various integrated passive systems such as natural ventilation, rainwater collection, storage and re-use, and with a cohesive daylighting strategy.

This Community/Cultural Center is meant to reinstill identity and promote responsible and sustainable growth within the city of Leander. It achieves this through the implementation of cohesive strategies across all scales, from urban to programmatic. The Center's program operates within an existing grid as a connective piece that will be crucial for Leander's transition from a commuter town to a prosperous city.

6. SUGGESTIONS FOR A MORE CONNECTED LEANDER

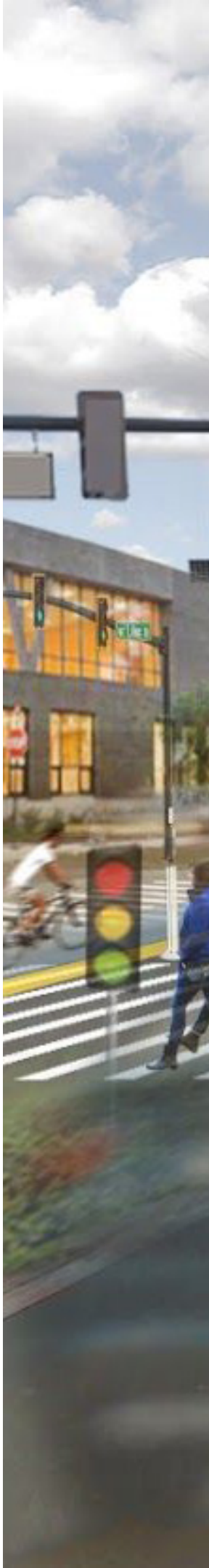
COURSE

INTRODUCTION TO GIS AND VISUAL COMMUNICATION

School of Architecture, Community and Regional Planning Program
Assistant Professor
Junfeng Jiao, Ph.D.
Spring 2016

Leander will become increasingly sustainable by promoting connectivity and pedestrian access within the community. A more connected landscape will benefit current residents by creating outdoor networks. These networks will allow people to move through the city with an increasing amount ease. It will also serve future students enrolled at Leander's ACC San Gabriel Campus. Located in close proximity to the city's TOD site, students without cars will gain better access to amenities and housing near campus and downtown.

Students in Introduction of GIS and Visual Communication used GIS and Adobe software to analyze bicycle networks and connectivity within a two-mile radius of Leander's TOD site. Specific attention was placed on the identification of bike network gaps and barriers to connectivity. Research included best practices and improvement recommendations that align with the city's current and future land use plans.



Rendering of U.S. 183 and Sonny Drive.
Credit: Team #8


S. Main

MADE IN LEANDER: A SITE ANALYSIS AND DEVELOPMENT PLAN IN LEANDER, TEXAS

STUDENTS

Kathryn Clarke
Samuel Day Woodruff
Annie Stocklin
Wei Xiao

This team was given the task to analyze the current assets and issues and hypothesize the future development for a small study area in Leander.

The team's site location, U.S.183 and Sonny Drive area, is comprised of 50 percent undeveloped open space east of U.S. 183 with land zoned commercial, institutional, single-family, vacant, and light industrial. This is a great opportunity to use the undeveloped land to bring in jobs, housing, and community wide resources, as well as preservation of publicly available green open space.

A SELECTION OF SUGGESTIONS FROM PLAN

1. Advocate celebrating the industrial area, which was proposed in Leander's comprehensive plan, to encourage types of businesses that supplement industrial uses.
2. Build a second Metro Red Line train stop at the corner of U.S. 183 and East Sonny Drive.
3. Transform the intersection of U.S. 183 and Sonny Drive from properties with large set backs and parking lots into a pedestrian-friendly, multimodal area.
4. Designate the U.S. 183 and Sonny Drive area to be a town center, complete with mixed-used buildings in the commercial corridor adjacent to light industrial retail and industrial, which can add new programs and help develop opportunities for local restaurants, retail, and bars.

View of before and after proposal for U.S. 183 and Sonny Drive. Credit: Team #8

SITE ANALYSIS AND DEVELOPMENT PLANNING OF CRYSTAL FALLS COMMONS

STUDENTS

Ankur Bhambotta
Samantha Moskol
Sara Sadeghi
Yiqun Yang

Similar to the previous group, this team was assigned a specific location to work on in Leander. Their site is bordered by Horizon Park Boulevard to the west and East Crystal Falls Parkway to the south.

Single-family detached units dominate this area. It lacks other land uses such as commercial, retail, mixed-use and offices. In particular, residential building types are limited in this area. No multifamily, town houses or apartments are found in this area, and these housing types are lacking through much of City of Leander as a whole.

A SELECTION OF SUGGESTIONS FROM CONCEPT PLAN

1. Add neighborhood-scale mixed-use development to increase commercial opportunities for residents.
2. Provide bicycle lanes on roads with higher connectivity.
3. Establish a shuttle bus service that will make incremental stops through the neighborhood, and coordinate with service of the MetroRail Red Line.
4. Preserve the natural habitat to the north of the site for recreational use and a business park. This can provide a pedestrian and bicycle trail connection.

View of East Crystal Falls Parkway and Ridgewood Drive before and after proposal. Credit: Team #9

PLACES TO PLAY: RECONNECTING THE MASON CREEK NEIGHBORHOOD

STUDENTS

Anna Lake-Smith
Allison Long
Akik Patel
Nirav Ved

The Mason Creek neighborhood overwhelmingly consists of single-family detached homes, comprising approximately 94 percent of the housing stock. The majority of the neighborhood's population consists of families with children, with almost 90 percent of the latter enrolled in public school. Only a fraction of the population are over the age of 65. With an average household size of 2.96, these statistics portray a neighborhood largely comprised of small families with school-age children.

This area serves as a microcosm of Leander and represents the changes Leander residents wish to see as stated in the comprehensive plan. There are few interconnecting sidewalks among neighborhoods. However, aside from Mason Creek Park, there are not many destinations within walking distance. The presence of a floodplain within sight of Leander Middle School prevents development and creates unutilized land.

RECOMMENDATIONS BY AREA INTERVENTIONS

SONNY DRIVE + U.S. 183

- Install highly visible crosswalks, bicycle lanes, and additional office and retail development to increase pedestrian and bike traffic and overall safety.

Existing map of Sonny Drive and U.S. 183 intersection. Credit: Team #1

Rendering of potential housing styles. Credit: Team #1

MASON CREEK PARK

- Reimagine the park as a place for all ages complete with play structures, more seating, a reflection pool, and other neighborhood destination attractions.

Existing map of Mason Creek Park with proposal. Credit: Team #1

Rendering of alternative park program. Credit: Team #1

LEANDER BOARDWALK

- A pedestrian boardwalk that rises above the floodplain over a proposed rain garden filled with native plants. It provides a connection across U.S. 183 and potentially to the MetroRail station.
- Biking and running lanes follow one side and the other side is dedicated to food trucks, seating, and other pedestrian amenities.

Map of the floodplain near U.S. 183 with potential boardwalk and rain garden. Credit: Team #1

Rendering of a pedestrian boardwalk. Credit: Team #1

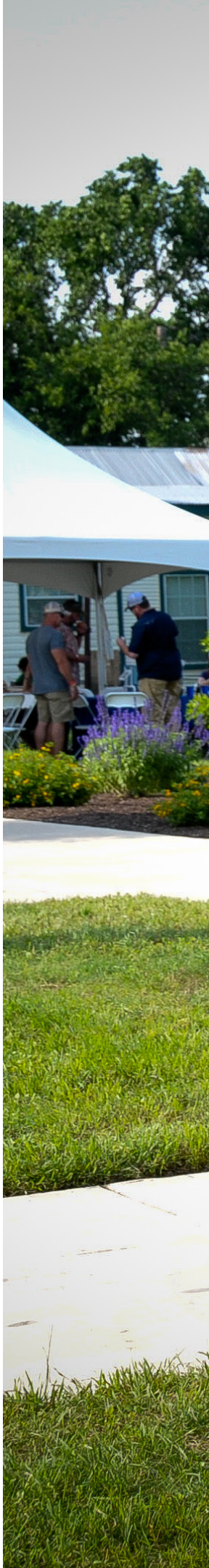
7. TOOLS FOR IMPLEMENTING PRESERVATION POLICY AND PROGRAMS

COURSE

PRESERVATION PLANNING AND PRACTICE
School of Architecture, Historic Preservation Program
Associate Professor
Michael Holleran, Ph.D.
Fall 2015

Students examined preservation opportunities within Leander's institutional context, providing student preservationists with an opportunity to apply their tools of practice. Their work included an exploration of federal, state and local governments, non-governmental institutions, and private sector support systems.

Students developed tools for implementing preservation policy and programs that fit into Leander's larger vision for the city, economic development plans, and regional efforts. This work included an inventory of Leander's historic assets, a marketing strategy to get the word out, historic preservation design guidelines, and funding opportunities to assist in development of a downtown historic district.



Old Town Street Festival attracts many attendees from all over the area. With the help of transit, Leander's attractions can be more widely accessible. Credit: Leander Chamber of Commerce


Welcome To:
Old Town
Street Festival
2015
Handmade
Soap
GO TEXAN!

INVENTORY OF LOCAL ASSETS

STUDENTS

Vishal Joshi
Andrew Leith
Lyndy Secrist

For this project, students created an inventory of tangible and intangible assets, as well as identified buildings for the purposes of placemaking. Students collected images and recommended items and properties by looking through A. Williamson Museum Collections and, Cedar Park Archives, and by conducting Leander stakeholder interviews. Here are a few examples of their suggestions in each asset category.

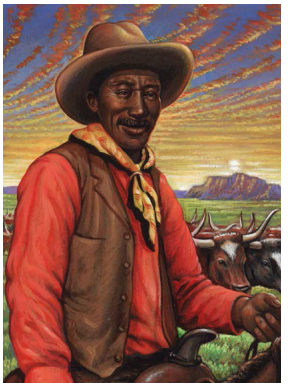
TANGIBLE ASSETS

Tangible assets are historic artifacts, or material residues of the past, that physically reveal local history. To the right is a selection from the report that identifies a tangible asset in Leander.

Dinosaur tracks along the San Gabriel River. Courtesy: Nicholas Kauffman

INTANGIBLE ASSETS

Intangible historical assets include significant historical characters, events, celebratory dates, and other non-material cultural capital unique to Leander that should be remembered and commemorated.



Famous rodeo star, Bill Pickett was born near Northwest Leander. Credit: U.S. Postal Service

EXTANT BUILDING STOCK SURVEY

The process of identifying extant building stock included a walking survey, photography, mapping, information infill from historic maps, and archival documents and local remembrances from informal interviews. The student group categorized four divisions for building stock:

Contributing: Structure is over fifty years of age and demonstrates local architecture or history.

Non-contributing: Structure is relatively new and does not contribute to local aesthetics. (For example, big-box stores or tract homes.)

Intermediate Significance: A structure that is less than fifty years of age but may be emblematic of vernacular construction and can one day be considered historic.

Complementary: A structure that is relatively new but demonstrates the extant vernacular cultural landscape.

The Heinatz House is an example of a contributing building stock. Credit: Student group

GETTING THE WORD OUT

STUDENT

Paula Nasta

Marketing the historic values of Leander can contribute to promoting the city and its quality of life as a whole. This can be accomplished using methods from the following categories. The selections offered in this report are a few examples from the many that students provided.

INFORMATION TOOLS

Gathering data and information can better inform Leander on what currently exists and how the city can improve and expand in its marketability:

Customer Base
Gather customer base data from Leander, Williamson, and Travis Counties.

Leander Video
Create a video on Leander's history that showcases major events between 1882-1972.

COMMUNITY EVENTS

Creating low budget community engagement activities in the heart of Old Town can eventually become sought after annual events and advertised around the surrounding counties:

Celebrate Founder's Days on June 16 and 17
Hold activities such as mule rides, log cabin building contest, train exhibits, square dancing, a craft fair, and a BBQ!

Stories in the Square
Host monthly picnics in the park geared towards preschool aged children and invite senior members of the community to participate as story tellers.

OLD TOWN BRANDING

Celebrate Leander's story by branding its history with:

Stock Shows and Rodeos
Celebrate two historic events native to Leander's region.

Agricultural Afternoons
Introduce farming activities by holding weekend lessons on suburban garden and urban farm skills.

Top photo: School Teachers in 1922. Credit: Williamson County Historical Commission, Middle Photo: Stories in the Park. Courtesy: Iowa City Public Library, Bottom Photo: Original logo. Credit: Paula Nasta

DESIGN GUIDELINES

STUDENTS

Bekka Grady
Stephanie Phillips

To ensure that Leander is a successful community, Old Town needs to develop as a thriving neighborhood, a commercial destination, and a place people want to visit and explore. The community envisions Old Town as a place where neighbors are able to safely walk and bike. A revitalized and reinvigorated Old Town is one of the most important elements of future Leander.

Residential home in Leander, Texas. Credit: Paula Nasta

The following strategies are six objectives to realize the potential of Old Town and Leander Station in order to consider historic preservation as integral to future planning.

PRIMARY OBJECTIVES:

1. Enhance and reestablish the historic character of Old Town Leander.
2. Development within Old Town should promote the revitalization and adaptive reuse, where appropriate, of existing historic structures.
3. A variety of housing types, including higher density residential, is appropriate, provided the scale of new development is compatible with existing development in Old Town.
4. A mix of uses, including office, retail and restaurants, should complement existing civic uses along North Brushy Street.
5. Infill development should complement and be compatible with the existing historic fabric of Old Town.
6. Old Town should be extremely walkable, providing for safe and convenient pedestrian access throughout the area.

Suggested design guidelines in the report operate under three principles and are designated into Existing Buildings and New Construction. The students' full report describes in more detail each of the guidelines Leander should address.

EXISTING BUILDINGS

Principle #1: Retention and celebration of elements of Leander vernacular is essential.

Principle #2: Preservation of features in place is preferred over replacement.

Principle #3: Appropriate flexibility in repair, addition, and use should be encouraged.

NEW CONSTRUCTION

Principle #1: New construction should be community and pedestrian-centric.

Principle #2: Complementary materials and features can provide variation and value.

Principle #3: Contemporary interpretations of traditional Leander vernacular should be considered.

FUNDING AND ELIGIBILITY

STUDENT

Izabella Dennis

In the United States, federal, state and local governments have implemented incentives for the preservation of historic buildings, structures and districts. These opportunities aid in preserving existing historic resources for modern day purposes and can help to revitalize downtowns and save the historic fabric of our nation. Even as Leander has become a destination for new development, City Council has identified "Old Town" as the geographic area of focus for centralized development. By understanding the options, benefits and limitations of government tax credits, grants and preservation programs, the City of Leander can investigate the eligibility of Old Town and plan for next steps in the funding process.

The following funding options are recommended for Leander to help preserve Old Town. The complete student report describes each opportunity in more detail.

FEDERAL FUNDING AND ELIGIBILITY

National Register of Historic Places Eligibility:

- Nominate individual buildings.
- List Old Town as a historic National Register district.
- Contact the Texas Historic Commission's National Register Coordinator to obtain assistance on the process.

Certified Local Government Program (CLG):

- Explore eligibility for grants and the adoption of sales tax incentives to entice new businesses and support existing ones.

Finally, entice local support! The community of Leander is one of the best assets for completing the legwork required for preservation funding research and surveys required for applications.

Leander, Texas in 1910. Credit: Williamson County Historical Commission

8. ALTERNATIVE PATHS TO TRANSIT ORIENTED DEVELOPMENT IN LEANDER

COURSE

TRANSIT ORIENTED DEVELOPMENT
School of Architecture, Community and Regional Planning Program
Associate Professor
Ming Zhang, Ph.D.
Spring 2016

TOD integrates transportation and land use in urban forms that surround transit stations. Moderate to high densities, mixed-uses, pedestrian and bicycle connectivity, and environmental access are design characteristics often associated with TOD sites. Leander's TOD site is located at the end of Capital MetroRail's Red Line, a 32-mile transit corridor that connects the greater Austin region.

Leander's TOD site will be significantly impacted by the development of a new ACC San Gabriel Campus. Research projects in this spring course explored how the development of the new ACC San Gabriel Campus will influence development patterns in the surrounding area. Students informed their research using series of case studies that highlights the relationship between TODs and higher education facilities.

Access to TOD will have a large impact on the new Austin Community College San Gabriel campus. Credit: Austin Community College (ACC)


AUSTIN COMMUNITY COLLEGE
Your #1 choice

PROPOSAL #1: AN AMBITIOUS REORIENTATION OF THE LEANDER STATION PROPOSED PLAN

STUDENTS

Jackson Archer
Sadra Dehghan
Sara Sadeghi

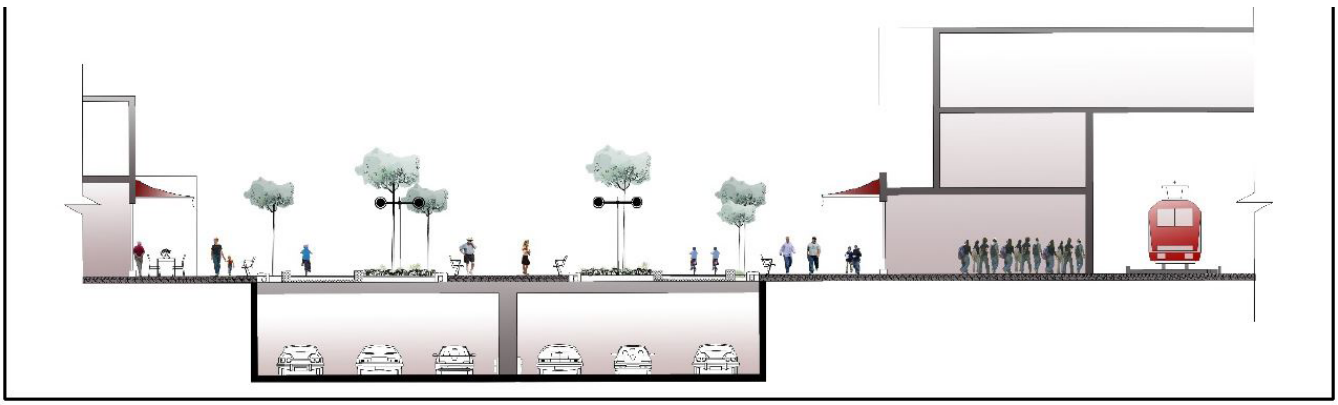
EXECUTIVE SUMMARY

The Ambitious Reorientation TOD Proposal is a proposal for land surrounding the Leander Station in Leander, Texas. Currently, much of the land surrounding the station is undeveloped, making the area a perfect place for a case study on TOD. This proposal seeks to address three main issues that come with the rapid growth of a largely undeveloped city. These are:

1. Disconnectivity with Old Town.
2. Site fragmentation due to U.S. 183, and
3. The potential issues that come with ACC in the TOD development.

Residents of Leander seek to have the TOD area be easily accessible from Old Town, the city's cultural and historical hub. Furthermore, U.S. 183 cuts through the TOD area and only includes a few crosswalks, so pedestrians are largely disconnected from the area. Finally, the arrival of the ACC San Gabriel Campus is set to bring challenges of its own – this educational campus will generate a large population of young people who want to use it. This influx requires the necessary infrastructure.

This report begins by discussing the city and station as they exist today, moves into the TOD proposal, looks at the financial aspects of the proposal, and finally looks at the implementation tools and problems addressed by the TOD proposal. The centerpiece of the TOD proposal is the reorientation of U.S. 183, which we propose to be moved underground with development built on top. The reorientation of the highway is dubbed to be "ambitious" (by our own admission), because such an orientation is not often seen in U.S. cities. Despite looking like an expensive option, this report draws on previous studies to show that, while ambitious, this TOD proposal is not unrealistic.



Transect of a potential TOD plan connected to a submerged U.S. 183.
Credit: Student group

VISION AND PROPOSAL

The Leander TOD area is a commercial anchor as well as a recreational attraction to the region. With the location of the new ACC San Gabriel Campus, this area will soon serve to improve educational attainment in the region. People can live, work, and entertain themselves right within the TOD. A sense of identity is found in the community thanks to the natural urban trail, the community gardens, and an active cultural scene at the plaza. The following implementation tools offer suggestions on how to create this vision.

IMPLEMENTATION TOOLS

Financial Analysis

- A Tax Increment Financing (TIF) plan is proposed as an economic tool for promoting development by use of public/private partnerships. This will help fund the proposed three phases of proposed development, including the underground reorientation.

Fragmentation Solutions

- Hero Way, an east-west corridor in the southern portion of the TOD forms a barrier between residents of Old Town and the TOD. The planned pedestrian bridge will connect the two sides.
- Move the U.S. 183 highway underground for the quarter-mile stretch known as the Gateway Area.

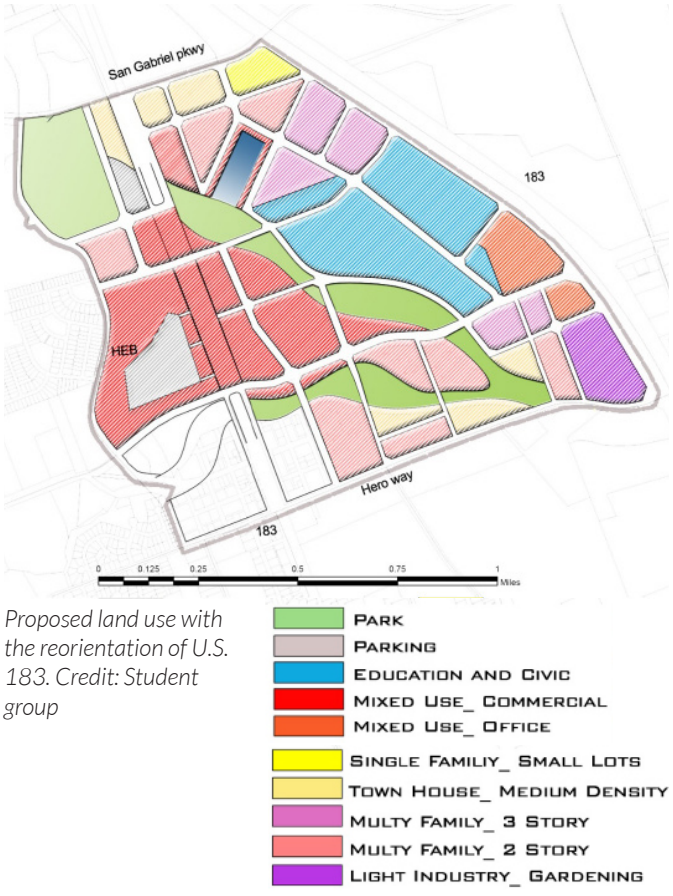
ACC San Gabriel Campus Inclusion

- Encourage developers to build affordable housing as 30 percent of the total housing
- Add 68 percent new housing infrastructure to accommodate students, teachers, and staff, 27 percent retail, and 5 percent office.

Parking

- Offer a low number of parking spaces in three phases so as to encourage alternative methods of accessing the area such as biking, carpooling, walking, etc.
- Eventually discourage driving through higher parking fares, and lower transit fares if the trip destination falls into the TOD.
- Introduce an internal bus system to help residents move within the TOD area.

PROPOSED LAND USE



Proposed land use with the reorientation of U.S. 183. Credit: Student group

PROPOSAL #2 FOR LEANDER METRORAIL STATION

STUDENTS

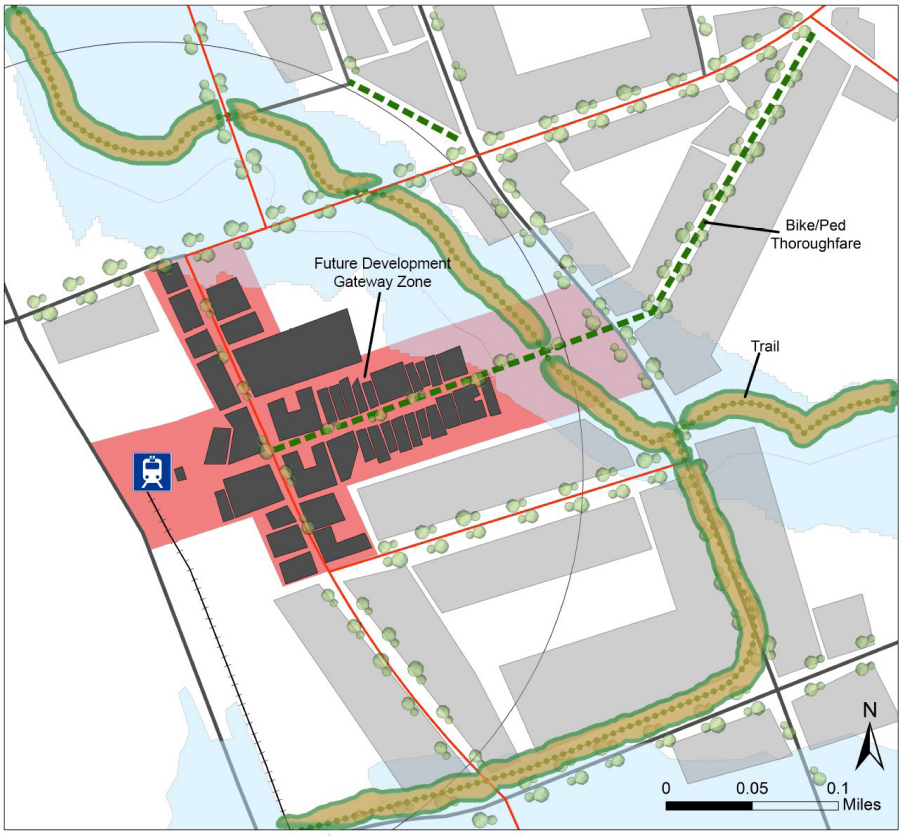
Neha Diggikar
Andres Junca
Shirley Lee
Zachary Lofton

INTRODUCTION

In 2004, Leander developed a TOD plan for this station that aimed to make Leander a destination. When the City of Leander created the code and plan it took a bigger step than many realized. This 2300-acre area ultimately will contain over 30,000 people and brings with it many moving parts that are not typically part of the suburban development that characterizes most of Williamson County and Central Texas.

Though transit ridership has steadily increased in Leander, several issues need to be addressed before the envisioned TOD development can take place. The first challenge has been getting developers to build mixed-use in an area that has developed as a bedroom community over the last few years with negligible dense mixed-use development. Another challenge is making residents understand the need for high density mixed-use development around the area.

OVERALL TOD VISION



Land use map of vision for TOD with access to all modes of transportation.
Credit: Student group

VISION AND PROPOSAL

The vision for Leander is that it will be a true transit-oriented development with access for all modes, prioritizing active transportation and transit while accommodating automobiles. This TOD will leverage elements of form-based code with the intent of enabling a vibrant and sustainable community with daily commercial necessities located in close proximity to transportation and housing. Furthermore, this station area, located in close proximity to both the historic downtown of Leander and the forthcoming ACC Leander campus, will provide strong connections to many of the community's points of interest. The main points of the proposal are summarized here; however, the complete report details financing and phasing of the group's suggestions, as well as implementation tools.

Land Use

- Rezone surrounding undeveloped parcels to reflect a more mixed-use orientation.
- Delineate into three zones with different development types and characters: The gateway zone, the midway zone, and the transitional zone.

Open Space

- Integrate open space in the Red Line station to create amenity value.
- Extend the current trail system to increase overall connectivity.
- Install a public plaza to forge more social interaction, better local cultural identity, and a more holistic investment as a result of placemaking.

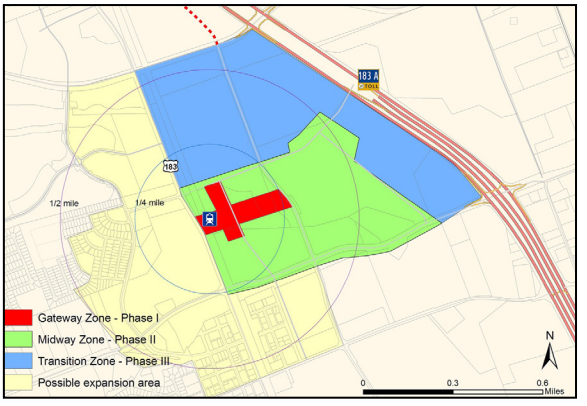
Gateway Zone: 30 units per acre for residential parcels with very close proximity to the rail station.

Midway Zone: Integrates more land uses such as education, smaller multifamily residential parcels, commercial uses, and a handful of planned unit developments.

Transitional Zone: Incorporates single-family residential areas.

Transportation/Circulation

- To benefit circulation, the addition of roundabouts, collector streets, shared streets, and bicycle/pedestrian streets are suggested.
- The Red Line station should ensure that pedestrians and bicyclists have safe access to all parts of the district and enable easy multi-modal trips.
- Converge circulator routes within the station area that will draw people in as well as enable trip chaining with express transit options.



Development Cost		
Phase I Gateway zone	**Phase II Midway zone**	**Phase III Transition zone**
$91.4 Million	$517 Million	$434 Million

Map and potential costs of proposed zones. Credit: Student group

9.RECOMMENDATIONS FOR TRANSIT ORIENTED DEVELOPMENT IN LEANDER

COURSE

PUBLIC TRANSPORTATION ENGINEERING
Cockrell School of Engineering, Transportation Engineering Program
Professor
Randy Machemehl, Ph.D.
Fall 2015

Public Transportation Engineering provides students the tools to characterize public transportation modes in terms of their most appropriate urban area applications. This includes the ability to conceptually plan and design integrated public transportation systems—that is, systems including multiple modes. As an independent project within the course, two students engaged a context-specific analysis of connectivity and public transportation access within the City of Leander. A report that includes their findings and recommendations will serve Leander as it refines and continues to develop transportation opportunities for its growing population.

Entrance to Leander Station's Park & Ride.
Credit: Lizzie Welch


ETRO
LEANDER STATION
PARK & RIDE

RECOMMENDATIONS FOR TRANSIT ORIENTED DEVELOPMENT IN LEANDER

STUDENTS

Manar Hasan
Elizabeth Welch

EXECUTIVE SUMMARY

Leander is a small but growing community north of Austin. With the northern terminal of the MetroRail Red Line located near the center of the city, Leander has a unique opportunity to develop vacant land around the station to accommodate its rapid growth. However, this will require reversing trends of low density development seen throughout the city.

Students analyzed two growth scenarios to determine how the land surrounding the station could be developed: "current trends continue" and "TOD." These were evaluated using a land use model developed for CityLab.

To successfully develop in a pattern that promotes transit ridership and more compact development around the station, land use and transportation trends must change to facilitate access of the Leander Station. The City's Composite Zoning Ordinance, SmartCode, and growth concept maps were studied to determine the opportunities for dense development. In addition to land use patterns, access to the Red Line by foot, bicycle, connector bus, and even automobile will all contribute to the station's success as a TOD.

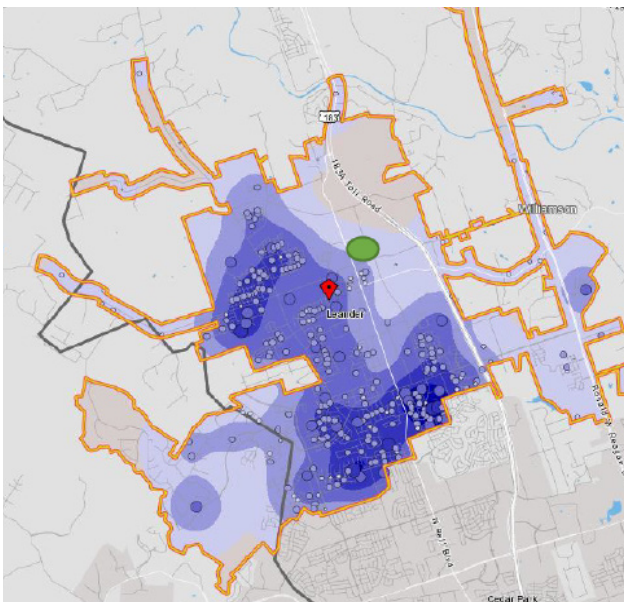
This report found that while Leander has begun to provide the tools needed to create dense development around the Red Line station, building types and transportation networks (automotive and non-automotive) approved in each planned unit development will determine how successfully the area functions as a transit oriented development.

LEANDER'S PRESENT

An evaluation of potential users of transit helps clarify the objectives of implementing TOD in the City of Leander. The following analysis includes demographic data such as population numbers and employment location.

QUICK FIGURES

- In 2013, 45 percent (6,070) of Leander's residents were employed in Austin.
- 10 percent (1,324) of residents work within Leander.
- 31,717 residents live in Leander.



Heat map of residence in Leander with green dot representing Leander Station. Credit: Student group

LEANDER'S FUTURE

According to Leander's State of the City report, the city's population is expected to grow between 50,000 and 100,000 by 2030. The impact of these new residents on the land use and traffic patterns in Leander and the northern part of the Austin metropolitan area will depend in part on how development occurs around the Leander Station of the Red Line.

The current development present within the 1-mile buffer of the Leander Station is a mix of single-family housing, multifamily housing, and low density commercial uses.

There are 1,182 acres zoned for PUDs within the mile radius. If existing patterns are replicated in the planned unit developments near the station, a model developed for Leander as part of the CityLab project estimates that 6,900 new households will be added. These approximately 24,300 new residents near the station will be more likely to use the Red Line and connecting bus services than if they were located at a further distance from the Leander Station.

Vacant property adjacent to Leander Station. Credit: Lizzie Welch

RECOMMENDATIONS FOR TRANSIT ORIENTED DEVELOPMENT IN LEANDER

GROWTH SCENARIOS

Transit Oriented Development Scenario

If the Planned Unit Development area within a mile of the station were to develop more densely (in accordance with the City's SmartCode), a larger number of residents would have convenient access to transit and would also be able to access goods and services by foot within the TOD.

The table below of land uses in PUD zoned areas was assumed to evaluate a "mixed-use" scenario.

In this scenario, 13,570 households would be located within a mile of the station, and 46,500 residents would be added in the area adjacent to the station. This growth pattern could contain all 40,000 residents expected to be added by 2030.

Land Use	Acres	Percent of Total
Single-Family (Row Houses)	354.6	30%
Multifamily	413.7	35%
Local Commercial	118.2	10%
Local Office	118.2	10%
Other Commercial/Industrial	177.3	15%

Example of mixed land uses within PUD zone. Source: Student group

Existing and TOD Growth Patterns

The TOD scenario includes development patterns that can absorb almost twice as much population growth as traditional development patterns in Leander while leaving room for retail, commercial, and office uses. A summary of the two scenarios for developing the PUD zones is shown in the table below, as well as projected population and employment rates within current pattern and TOD scenarios:

Scenario	Households	Population	Employment
Current Patterns Continue	6,900	24,300	4,900
Transit Oriented Development	13,500	46,500	15,000

Projected households, population, and employment from two scenarios. Source: Student group and U.S. Census

RECOMMENDED CHANGES IN URBAN LANDSCAPE FOR TRANSIT ORIENTED DEVELOPMENT

To realize the full benefits of the Leander Station Red Line, the city should continue its efforts to create transit oriented development near the station. This includes encouraging dense housing and employment patterns, providing bicycle and pedestrian connectivity to the station, continuing to offer a Park & Ride option, and evaluating existing and potential opportunities for connector bus service.

Pedestrian and Bicycle Facilities Suggestions

- Pedestrian facilities should be the highest priority in developments within a half-mile of the station.
- Area west of the station will need adequate pedestrian facilities.
- Address the necessity for enhanced pedestrian safety and accessibility in existing areas.
- Install bicycle connections to the station that can extend travel options and, therefore, increase the value of the land.
- Connect bicycle routes to existing trails to provide more connections to the station.

Park & Ride Suggestions

- Consider reconfiguring the existing 14.5-acre parking lot to accommodate more development around the station and make walking easier.

Connector Bus Services

- Evaluate feasibility of providing bus and shuttle service between community centers and the Leander Station to increase access to the Red Line.

Students alighting the school bus are picked up by a car.
Credit: Lizzie Welch

Kiss and Ride parking lot at Leander Station.
Credit: Lizzie Welch

Example of a circulator bus in Columbus, Ohio with inspiration from Washington, DC's popular Circulator.
Credit: Darius Pinkston on Flickr

10. PRELIMINARY RESEARCH TOWARD A SUSTAINABILITY PLAN FOR LEANDER

COURSE

URBAN STUDIES RESEARCH METHODS
College of Liberal Arts, Urban Studies Program
Professor
Paul Adams, Ph.D.
Spring 2015

Students in Dr. Paul Adams' Urban Studies Research Methods course conducted initial research that builds a foundation for a citywide sustainability plan. Small groups used archival, observation, survey and interview methods to investigate specific aspects of sustainability that Leander's developing plan could address. Research focused on issues including energy use, water conservation and quality, waste and recycling, land use and transportation, and natural features such as parks and green infrastructure. Students interviewed Leander residents, tested the water quality of Brushy Creek, conducted shade tree counts in different neighborhoods, analyzed land use and transportation trends, and observed park and open space use. The City of Leander can use the general trends identified through this research as it continues to develop planning documents and policies that ensure quality of life through community-focused sustainability.

More than two dozen students participated in the course. The following section highlights a report by one student, Phoenix Alfaro, that describes some of the survey work done by the entire class, in addition to his own analysis of this survey.

Assistant City Manager Tom Yantis speaks to Dr. Adam's class about Leander's current sustainability conditions.


Richard
COFFMAN

CREATING A SUSTAINABLE FUTURE: ENVIRONMENTAL IMPACTS AND PERCEPTIONS IN LEANDER

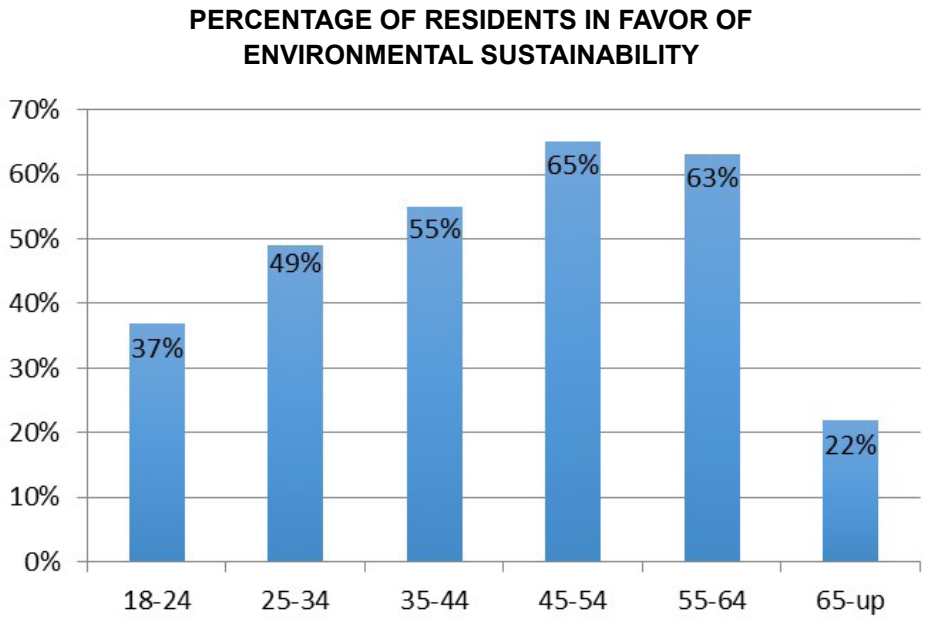
STUDENT

Phoenix Alfaro

The data for this project was collected by conducting a survey in Leander, TX on March 30, 2016 and April 12, 2016. In order to abide by solicitation laws that limit where surveys and interviews are allowed to be administered, public places such as the city library, parks, and community events were chosen for surveys and interviews to take place. Neighborhood walks were also completed to find residents who were willing to complete the surveys and interviews. Overall, 183 people were surveyed.

Although the overall survey consisted of 23 questions, this highlighted section of the report focuses on only one question, for the purpose of investigating what percentage of residents are in favor of promoting environmental sustainability.

This particular survey question asked, "How do you feel about rules and regulations controlling Leander's development?" Respondents then needed to mark all options that applied, one of them being "city regulations should promote environmental sustainability." Of the 183 respondents, 97 chose this option. This means that over half (53 percent) of the respondents gave answers that indicated that they were in favor promoting environmental sustainability in their city.

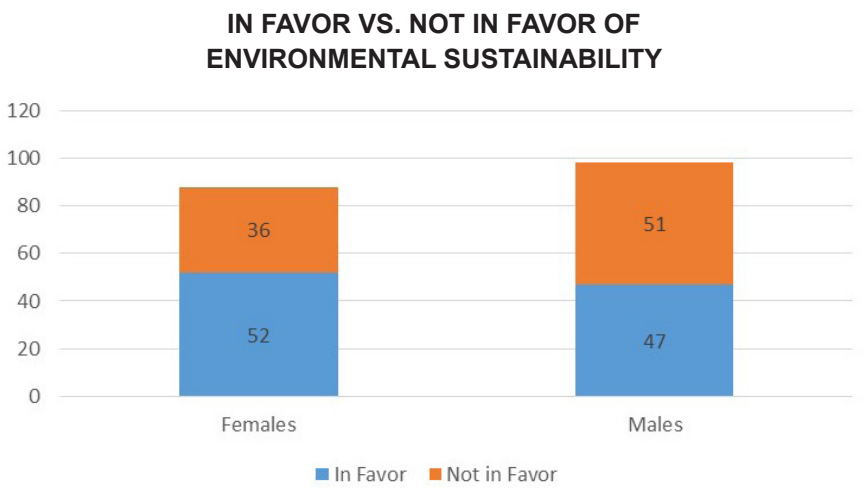


Age differences in environmental perception. Source: Survey conducted

A majority of respondents (53 percent) were in favor of promoting environmental sustainability in Leander. Although men and women were found equally likely to be in favor of environmental sustainability in Leander, there was a difference in expressed support for sustainability among different age groups. An increase in support from 18 to 54 years was discovered, followed by a slight decline from 55-64 years and a significant drop at 65 years and above. When creating a linear regression, a negative slope was calculated with a weak R-squared of 0.0056. This is a result of the 65 years and up age group weighing down the line of best fit. When omitting this age group, a positive association with a strong R-squared of 0.8947 was calculated (Figure 14). Only 37 percent of respondents 18-24 years were in favor of environmental sustainability, which was the second lowest of all age groups. Residents aged 45-54 years were the group most in favor of environmental sustainability.

Although the survey found that a majority of respondents (53 percent) were in favor of promoting environmental sustainability in Leander, this also means there likely is a sizable portion of the population that is not concerned about sustainability in Leander. Increased outreach, including information that makes the case that sustainability is an issue that impacts the community as a whole, could shift more residents toward support for sustainability issues such as water conservation, land use and transportation, and waste management (Poeck & Vandenabeele 2012). Specific ideas for engagement include:

- Provide written information about community sustainability at public places such as the library and parks.
- Offer local tours of sustainable infrastructure examples such as bioswales and pervious cover.
- Display financial analyses that make the case for savings such as those associated with reduced energy costs and shade tree plantings.
- Continue to promote sustainability programs in Leander's strong public schools.



Gender differences in environmental perception. Source: Survey conducted

Source: Poeck, K.V, Vandenabeele, J. (Aug 2011) "Learning from sustainable development: education in light of public issues" Environmental Education Research, 18(4), 541-552

CONCLUSION

As the principal investigator for the Leander Texas CityLab year, I've been working for about two years with City of Leander staff, Center for Sustainable Development staff, and UT faculty and students to create the program. After many meetings and much email correspondence, I felt pretty familiar with Leander's story—a small city growing rapidly due to its strong schools, its safe and friendly community, and its proximity to Austin.

However, when I joined one of Dr. Paul Adam's Urban Studies Research Methods site visits to Leander last February, I came away from the day with a better understanding of the remarkable choices that Leander has made. As I sat with the class around picnic tables in Old Town, we listened to Assistant City Manager Tom Yantis describe Leander's current sustainability conditions. We later joined him on the MetroRail train platform adjacent to the TOD area, where we heard the story of how Leander voted to become a member jurisdiction of Capital Metro and support it with a one percent sales tax. As I listened to the discussion between Tom and the students, I really got a sense of the foresight and innovation shown by Leander's City Council and citizens as they have sought to balance tremendous growth with their community's quality of life.

Over the past ten months, hundreds of UT students, guided by ten faculty members, have analyzed, planned, designed and generated new knowledge about Leander's past, present and possible futures. Since all of the projects chosen for this year primarily focused on the built environment, I was a little concerned that the classwork might end up being too redundant. However, as I worked with Rebecca Fleischer, the editor of this final report, to sort through the thousands of pages of reports, data, designs and analysis, it became clear that a particular strength of this program year was that students from diverse disciplines crafted a shared vision for Leander, from scales ranging from street to building, neighborhood, district, city and region.

In this report, UT Austin students— from the fields of architecture, engineering, historic preservation, planning, and urban design—draw on original research and precedents to describe a pathway for a Leander that honors its small-town Texas roots while embracing an accessible, connected and vibrant future. I look forward to watching Leander's journey, continuing to learn from their city's leadership, and seeing how the Texas CityLab year makes a contribution to Leander's future.

KATHERINE LIEBERKNECHT
Texas CityLab Principal Investigator

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BIOGRAPHIES

KATHERINE LIEBERKNECHT

Katherine Lieberknecht is an assistant professor in the School of Architecture at The University of Texas at Austin and served as principal investigator of the Texas CityLab program for the 2014-2015 and 2015-2016 program years. She is also a fellow with the School's Center for Sustainable Development. Her research areas include urban water resources planning, metropolitan-scaled green infrastructure planning, and food-energy-water systems of metropolitan areas.

Dr. Lieberknecht currently teaches courses on urban agriculture systems, water resources planning, and urban ecology and has taught courses on land conservation, non-profit management and property rights. She has published academic articles in the *Journal of the American Planning Association*, the *Journal of Hydrology*, and the *Journal of Sustainable Forestry*, as well as published numerous professional reports focused on land conservation, sustainable economic development, and neighborhood sustainability planning. Prior to joining the UT Austin faculty, she worked as a planner in private practice in Oregon and as staff member at the Finger Lakes Land Trust in upstate New York. She received her Bachelors of Science in Biology from the College of William and Mary, a Masters in Environmental Management from Yale University, and a Ph.D. in City and Regional Planning from Cornell University.

TOM YANTIS

Tom is the Assistant City Manager for the City of Leander, Texas. In this role, Tom manages the departments of Planning, Engineering, Economic Development and Parks and Recreation.

Prior to joining the City of Leander, Tom was the Chief Administrative Officer for the Brushy Creek Municipal Utility District where he provided management oversight for one of the largest MUDs in the State. Prior to his tenure with Brushy Creek, Tom led the community planning national practice for H.W. Lochner.

Before joining Lochner, Tom served as Assistant City Manager for the City of Georgetown, Texas for over eight years. During that time, Tom managed all aspects of the City and was instrumental in the completion of major development projects including The Rivery, Wolf Ranch and numerous downtown redevelopment projects. Tom served as Interim City Manager in 2002.

Prior to his tenure with the City of Georgetown, Tom was a consultant with two international consulting firms, KPMG and Andersen Consulting, where he advised public sector clients on management and technology issues.

Tom holds a Bachelor of Arts degree in Government and a Master of Science degree in Community & Regional Planning from The University of Texas at Austin.