Texas CityLab

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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More information also available on our website: soa.utexas.edu/texascitylab

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

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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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.
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.
Student research projects will contribute to the development of 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.
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.
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.
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.
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.
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 of 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.