Scenario Planning Report
Austin South Shore Central

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SUSTAINABLE PLACES Project

View of Downtown Austin from South Shore's Statesman site.

Introduction

Austin's South Shore Central Sub-District

South Shore Central is an 88-acre sub-district of the waterfront overlay. As a fairly auto-oriented jobs center, the pedestrian environment isn't conducive to walking, and access to the lake is unclear and informal due to poor street connectivity and large city blocks. The sub-district has many benefits including excellent access to downtown, connections to three major arterials, and its location on Lady Bird Lake, one of the City's most important cultural and environmental assets.

Past planning efforts for the area have identified several desired community goals or outcomes:

- Access to the lake
- Increased public open space
- Affordable housing
- Environmental performance
- Green infrastructure
- Walkability and bikeability
- Fiscal balance

Sustainable Places Project and Demonstration Site Planning

Through a grant from HUD and a regional partnership of local governments and other stakeholder groups, the Capital Area Texas Sustainability (CATS) Consortium is developing a new approach to planning in Central Texas through the Sustainable Places Project. The project will examine several growth scenarios for activity centers in South Shore Central Austin, phase one of a proposed urban rail corridor running through Austin, Dripping Springs, Elgin, Hutto, and Lockhart. An innovative analytics tool is being developed to identify the long-term effects of the various scenarios on municipal budgets and the health of communities. We used this analysis tool to develop plans that align housing, jobs and transportation options in a way that complements existing community values. While other scenario planning efforts have been done for Dripping Springs, Elgin, Hutto, and Lockhart, this project examines several growth scenarios for South Shore Central Austin.

Scenario Planning

Establishing the Building-Level Foundation of Scenarios

Scenario planning is a methodology that allows communities to better prepare for the future by examining and comparing a set of plausible futures that result from different strategies, and then selecting those strategies that give rise to the most desirable outcomes given local or regional priorities. It uses powerful analytical tools to estimate how well existing or potential plans and strategies will meet important local and regional needs given different assumptions about the future.

The scenario planning process begins with the creation of realistic and feasible building prototypes based on local real estate market data. To do so, planners utilize a building-level return on investment (ROI) model. The model evaluates physical form inputs (e.g., height, unit sizes, parking configurations) as well as financial inputs (e.g., rents, sales price, construction costs, land costs). Scenarios developed using ROI models have a built-in business plan behind them, and in turn, master plans based on these scenarios are more likely to be implemented because they are founded on market-feasible solutions.

This analysis shows that South Shore Central's potential rents are comparable to current downtown market rates due to amazing views and proximity to downtown. As a result, many development projects are financially feasible. Three prototypes were used in modeling South Shore Central: a 5- to 6-story "wrap" style mixed-use building, an 8-story "courtyard" building, and a 12- to 15-story high-rise building. All models were calibrated based on achieving a 12% rate of return on the investment (IRR).

	5-Story "Wrap"	8-Story Courtyard	12-Story+ High Rise
Construction Costs	Hard: $19.6m Soft: $2.3m	Hard: $26.3m Soft: $2.9m	Hard: $63.2m Soft: $6.7m
Land Costs	$3.7m ($85 / sq ft)	$3.7m ($85 / sq ft)	$3.7m ($90 / sq ft)
Parking Type	Structure	Structure	Underground / Structured
Density	91 du/acre	101 du/acre	215 du/acre
Square Feet	Rental Res: 98,700 Retail: 17,414	Rental Res: 109,000 Retail: 19,200	Rental Res: 213,000 Retail: 18,500
Rent (per Sq Ft)	$2.02	$2.32	$2.95
Return (IRR)	12%	12%	12%
Profit (NOI)	$2.35 million / yr	$3.06 million / yr	$6.76 million / yr

Three Scenarios for South Shore Central

Envision Tomorrow Plus was used to create three scenarios: a base scenario using existing zoning and standards, a scenario based on input from the American Institute of Architect's Sustainable Design Assessment Team (SDAT) charette, and a scenario constructed by University of Texas/School of Architecture/Texas Futures Lab.

Scenario 1: Base Zoning Build Out

This scenario reflects the current development regulations that govern development in the South Shore area. Existing regulations examined by the model include: base zoning, waterfront overlay, PUDs (individual parcels), square footage maximums, height limits, impervious cover limits, FAR limits, and setback requirements.

Key Findings

- **There are many layers of complex regulations that often do not result in creating the places people want** or that match the aspirations expressed in numerous planning documents.

- **There is currently no real vision for the sub-district.** General principles were set forth in the 1985 Town Lake Corridor Study, but the vision it recommended was never developed.

- **Lake access is an issue and is not guaranteed under current regulations.** For instance, most parcels are limited to 60 feet with the intended purpose of preserving views of downtown and the lake. This could potentially result in a wall of 60-foot buildings that obstruct views more than buildings of flexible design and height.

- **New development is currently being permitted without a cohesive vision.** The outcomes are uncertain for the public and potential investors. There are several projects being built or in permitting presently.

- **The lakefront parcel has square footage limits that effectively mean no new building can exceed three stories.** Owned by the Statesman, this parcel enjoys some of the best views in the city.
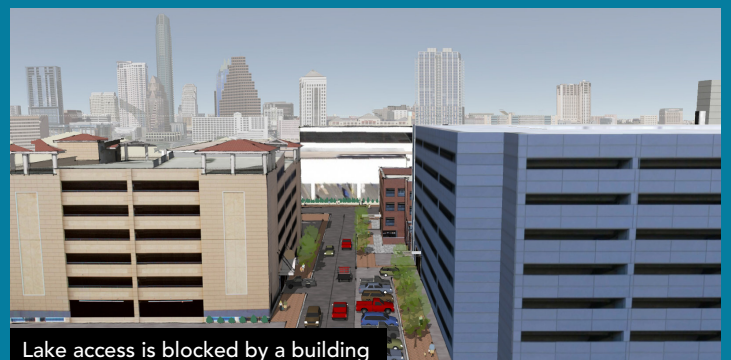

Scenario Map

1. 17-Story/200 ft building
2. 3-Story building
3. 5-Story building
4. 3-Story building
5. Stepped back 3- to 5-story building w/50% impervious limit
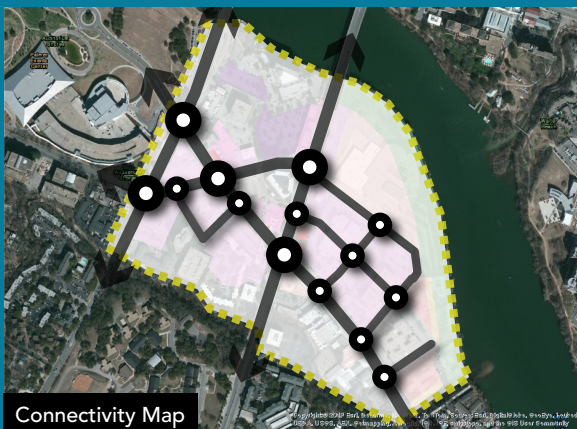

Lake access is blocked by a building

Urban sidewalks are only required along building edges

Connectivity Map

Scenario 2: South Shore Central and SDAT Vision

In 2012, the American Institute of Architects awarded Austin a Sustainable Design Assessment Team (SDAT) to assist the South Shore Central community and its residents in addressing key issues. The SDAT Team members worked closely with local officials, community leaders, technical experts, non-profit organizations and the public to study the community and its concerns. The team presented a wide range of recommendations to the community in a public meeting. This scenario was developed to match the recommendations and design ideas that came out of the SDAT's efforts.

Key Findings

- **The vision included a significant emphasis on expanding open space** by leveraging existing natural areas, such as stream corridors and the lakefront.

- **The existing large, suburban block pattern was made more pedestrian-friendly** with the addition fine grained local streets and pedestrian connections.

- **The buildings envisioned for the sub-district allow for commanding views from within the residences or offices while preserving view sheds for nearby neighborhoods.** However, they are taller and slimmer than what is allowed by current zoning.

- **Connectivity and linkages to the lake have been significantly improved.**

- **Active building fronts and good design were a community goal.** Walkable urban sidewalks with green features were included as part of the overall design.

- **Ambitious, affordable housing goals were included.**
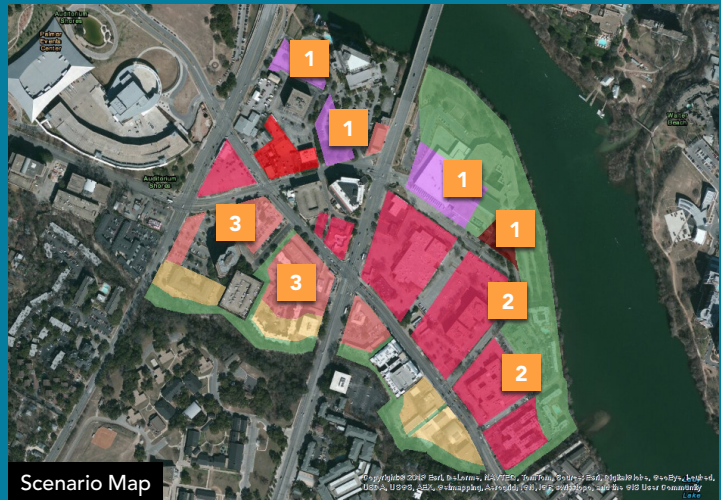
Scenario Map

1. 12-Story building   **2.** 8-Story building   **3.** 6-Story building
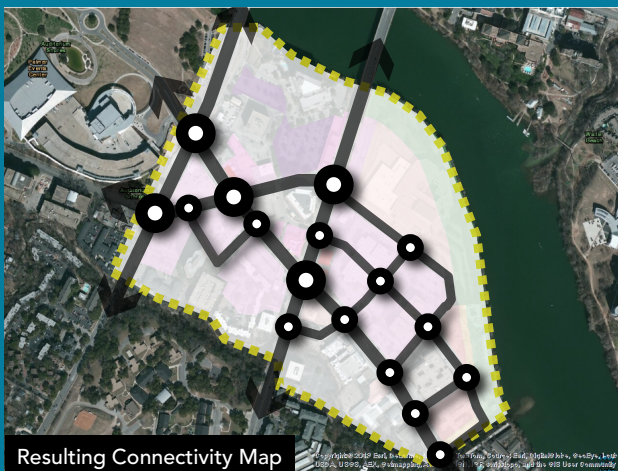

SDAT Building Envelopes

Active Building Fronts & Good Walking Environment
Urban Sidewalks with Green Features
Lake access is fundamental

Urban sidewalks are only required along building edges

Resulting Connectivity Map

Scenario 3: University of Texas/School of Architecture/Texas Futures Lab

Students in the UT Urban Design/Texas Futures Lab spent one term constructing a unique vision for the South Shore area as well. Their vision had a strong emphasis on green infrastructure and green building design and was based on the principles laid out in the SDAT Scenario including the same parking standards.

Key Findings

- **Off-site impacts from run off, particularly into the lake, were fully eliminated** through the use of bioswales and rain gardens.

- In order to create a family-oriented urban district, **the students included buildings with larger than average unit sizes.**

- **Affordable housing units were mixed with market-rate units throughout the sub-district.**

- **Connectivity was improved through the inclusion of many small road and pedestrian routes.** This resulted in the most dense road network of all three scenarios.

- **A broader range of building types were included within the sub-district** including townhomes and point towers.

- **The UT/Texas Futures Lab included plans for rail access.**

Scenario Map

1. 16-Story point tower

2. 6-Story courtyard building
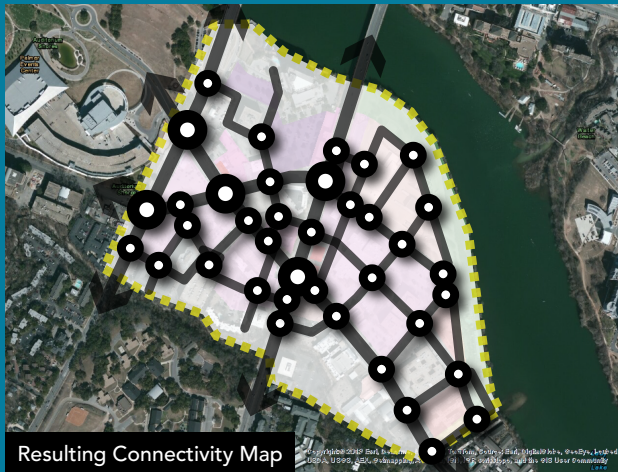
3. 5-Story apartment with affordable

4. 4-Story apartment with affordable

5. 12-Story point tower

6. 16-Story hotel

7. 6-Story wrap

Resulting Connectivity Map

Building Envelopes - view towards downtown

Building Envelopes - view along South Congress Avenue

Scenario Results & Comparison

Population and Housing

- **Total Population:** 5,544-8,472 new residents added to the sub-district in all scenarios. The SDAT Scenario adds the most new residents – 8,742 more than today. The Base Scenario allows for 7,733 more residents.

- **Total Housing Units:** Housing units doubled to quadrupled in all scenarios, with the SDAT Scenario providing the most housing – 3,911 new multifamily units.

- **Housing Unit Types:** Predominantly mid-rise developments in all scenarios.

- **Average Rent for New Units:** $2.15-2.38 per sq ft market rents for all scenarios. The SDAT Scenario resulted in the highest achievable rents at $2.38 per sq ft.

- **Employment Mix:** SDAT is the only scenario that expands employment.

- **Jobs-Housing Balance:** All scenarios trade jobs for housing due to goals of current and proposed policies to add housing to the area. Currently the jobs-housing balance is 3.5. Base Scenario shows the smallest jobs-housing balance at 0.9 and the UT/Tx Futures Lab Scenario has the highest jobs-housing balance at 1.4 of the three scenarios.

- **Housing and Job Density:** Housing density is 2-3 times higher in all three scenarios than it is currently because housing is being built instead of new office and job related buildings.

- **New Affordable Units:** 14% of units in the SDAT and 15% of units in the UT/Tx Futures Lab are affordable.

Transportation

- **Vehicle Use:** 10-25% fewer vehicle miles traveled (VMT) per person in all scenarios, with the dense street network in the UT/Tx Futures Lab Scenario resulting in the lowest VMT at 17.34 miles per person.

- **Travel Choices within the Sub-District:** 54-73% of internal trips are by foot, this is primarily due to more people living and working close to desired destinations. The improved street network is also a major factor. The SDAT Scenario showed the highest rate of walking trips at 73%.

- **Transit Trips:** Transit trips double in all three scenarios, with the UT/Tx Futures Lab Scenario showing the most total transit trips at 4,924.77.

- **Shared Parking:** Increases in walking, combined with mixing uses presents an opportunity for shared parking in the area.

Fiscal Performance

- **New Building Value:** $1.8 billion in new building value added by the SDAT scenario, the most of any scenario, although all scenarios resulted in $1 billion or more added value.

- **Gross Monthly Residential Rent:** $8-9 billion in gross monthly rent possible through the Base and SDAT Scenarios. Because there are fewer units in the UT/Tx Futures Lab Scenario it results in lower total rental revenue.

- **Revenues vs. Expenditures:** The SDAT Scenario generates revenue at the lowest cost because it includes more non-residential development.

- **Net Annual Revenue:** The SDAT Scenario results in $21 million in net revenue by including a good mix of non-residential (office and retail) in the area, more than any other scenario. Residential uses have higher service costs compared to non-residential uses, contributing to reduced net annual revenue for the housing intensive UT/Tx Futures Lab Scenario.

Open Space and Green Infrastructure

- **New Open Space:** SDAT and UT/Tx Futures Lab Scenarios more than double open space over the Base Scenario. Both scenarios result in ~20 acres of open space and an additional 5-7 acres of green roofs.

- **Impervious Building Area Cover:** SDAT and UT/Tx Futures Lab Scenarios halve the amount of impervious building cover of the Base Scenario.

- **Impervious Parking Lot Area Cover:** SDAT and UT/Tx Futures Lab Scenarios create one-third or less parking lot coverage over the Base Zone Build Out. The UT/Tx Futures Lab Scenario requires only 8% of the sub-district's surface as parking compared to 30% for the Base Scenario.

- **Impervious Cover Across Entire Site:** Base Scenario results in more impervious cover than exists today, with approximately 15% more site covered with impervious site than required by the SDAT and UT/Tx Futures Lab Scenarios.

- **New Green Roof Area:** Green roofs and other green features help reduce impervious surface areas significantly in the SDAT and UT/Tx Futures Lab Scenarios.

- **Reduced Runoff:** The UT/Tx Futures Lab Scenario results in significantly less stormwater runoff into Lady Bird Lake than the other two scenarios. No green features are required in the Base Scenario, thus there is no reduction in runoff.

Sustainability

- **Energy Use:** With conventional energy use, all scenarios are about the same, The UT/Tx Futures Lab Scenario requires slightly more energy primarily due to larger unit sizes.

- **Energy Savings from Green Features:** The UT/Tx Futures Lab Scenario shows significant energy use and cost reductions due to green features over the Base Scenario. Green roofs and rain gardens make a big difference in overall energy savings. The UT/Tx Futures Lab Scenario green features save $110,669 per year; the SDAT Scenario's green features save $26,036 per year.

- **CO_2 Emissions Avoided:** The UT/Tx Futures Lab Scenario's energy savings result in 1.46 million fewer pounds of CO_2 emitted each year. Energy savings are total pollutant reduction and CO_2 emissions avoided. Green features are not required in Base Scenario, thus there are no significant energy savings.

A table summarizing all indicator data for existing conditions and the three scenarios can be found at the end of this document in the **Appendix**.

Conclusions and Lessons Learned

The analysis of these three scenarios has provided useful insights for the South Shore Central Sub-District.

- The base scenario performs well in some areas such as travel demand. While the other scenarios improved on these indicators, the inherent centrality of the site means that vehicle miles traveled will be lower, and non-auto travel modes higher than in the same development in a non-central location.

- The sub-district suffers from a lack of defined urban form and a strategy to obtain and build infrastructure.

- All three scenarios are profitable and could be built under current market conditions.

- The three scenarios are not significantly different in terms of density. They were all within a few hundred units of each other.

- Because of the land costs and high-density buildings, the average new rents will be more than $2,000 a month without actions from City. However, the market would probably support these rents.

- There are many tools to ensure that 20% or more of the new units are affordable at 60% of median income. However, many of these require public funds to subsidize the units, or a regulatory scheme to incentivize the units.

One of the obvious solutions to realize community goals is to sponsor a master plan for the sub-district. A master plan for the sub-district could bring:

- Up to $21 million in new annual net revenue through property and sales taxes.
- If these funds were captured and directed back into the site, they could fund acquisition and creation of public open space, trails and pedestrian connections, roadways and streetscapes, green infrastructure, public art, and other community benefits.
- Up to 1,400 new jobs (SDAT Scenario) and better jobs-housing balance in all the scenarios.
- An integrated approach to infrastructure.
- Greater connectivity to and along the lake.

In addition, the scenarios indicated that green infrastructure is feasible. Examples include:

- Green roofs
- Biofiltration
- Rain gardens
- Rainwater harvesting

It is possible to leverage an active housing market to achieve affordable housing goals in several ways, such as:

- Using density bonuses to allow higher density and therefore more return, but having a portion of the additional profits used to develop affordable units.
- Development agreements with the City.

Finally, a small area plan would allow a community dialogue that would provide a way to meet several conflicting goals, including:

- A financially feasible and motivating path forward for private development.
- Improved public access to Lady Bird Lake and its shoreline.
- Development of community amenities by capture of the value of new development or of incremental new taxes generated by the project.
- Ensure that views from adjacent neighborhoods are preserved while yielding these benefits.
- Achieving lower environmental impacts than current codes while achieving equivalent profits and affordability.
- Development of a more walkable neighborhood.
- The addition of many more affordable housing units than would otherwise be built.
- The creation of a superior urban design while achieving the above goals.

Appendix: Full Scenario Indicator Data

Indicator	Existing Conditions	Scenario 1: Base Zone Build Out	Scenario 2: SDAT	Scenario 3: UT/Tx Futures Lab
Total population	2,878	10,611	11,620	8,422
Population added	N/A	7,733	8,742	5,544
Total housing (units)	1,359	4,744	5,270	3,179
Housing added (units)	N/A	3,385	3,911	1,820
Average household size (persons)	2	2	2	2
New Housing Units by Type				
High-rise (10+ stories)	N/A	1,002	1,199	603
Mid-rise (4-8 stories)	N/A	2,503	2,714	1,662
Low-rise (1-3 stories)	N/A	314	258	113
Average rent for new units	N/A	2	2	2
Employment by type				
Retail	530	1,375	1,841	671
Office	3,086	1,737	2,898	2,417
Industrial	35	35	-	-
Public/Civic	1,133	1,133	1,133	-
Educational	-	-	-	-
Hotel/Hospitality	489	489	910	626
Jobs Housing Balance	3.5	0.9	1.2	1.4
Housing units per Gross Acre	22.7	67.7	67.4	44.8
Jobs per gross acre	79.8	60.3	54.6	60.2
Combined Living Costs ($)	1,659	2,602	2,656	2,774
Transportation costs/month ($)	687	664	660	633
Energy costs/month ($)	72	75	75	83
Housing costs/month ($)	900	1,863	1,921	2,058
New affordable housing units	N/A	-	594	331
VMT per capita (miles)	23.1	20.8	20.2	17.3
Trips within the district by mode				
Walk	36%	54%	73%	68%
Vehicle	64%	46%	27%	32%
Walking trips	3,388	8,158	10,872	9,151
Transit trips	2,171	3,474	4,583	4,925

Population and Housing (rows from Total population through New affordable housing units)

Transportation (rows from VMT per capita through Transit trips)

	Indicator	Existing Conditions	Scenario 1: Base Zone Build Out	Scenario 2: SDAT	Scenario 3: UT/Tx Futures Lab
Transportation	Reduction in parking demand from shared parking and mixed use	N/A	14.1%	14.9%	18.3%
	Intersection density (intersections/sq mi)	58	101	123	274
Fiscal Performance	New building value ($)	N/A	1,288,583,187	1,799,471,119	999,304,467
	Gross monthly rent ($/month)	N/A	8,006,058	9,132,980	5,719,592
	Net annual revenue ($)	N/A	11,079,295	21,268,458	8,880,230
	Annual revenues ($)	N/A	29,797,745	44,397,770	24,056,033
	Annual expenditures ($)	N/A	18,718,450	23,129,312	15,175,803
Open Space & Green Infrastructure	New open space (acres)	N/A	10	26	26
	Green roofs (acres)	N/A	-	5	7
	Open space (acres)	N/A	10	21	19
	New impervious cover				
	Building area	N/A	90%	56%	46%
	Parking lot area	N/A	30%	13%	8%
	Entire site	75%	82%	67%	66%
	New green roof area (sq ft)	N/A	-	231,573	313,135
	Reduced runoff (gallons/year)	N/A	-	1,305,267	5,857,531
Sustainability	Energy use (1000 BTU/year)	71.6	74.7	74.7	78.9
	Energy savings from green features ($/year)	N/A	-	26,036	110,669
	CO_2 avoided (lbs)	N/A	-	324,734	1,455,881