Conceptual Master Plans for the Brackenridge Tract

PROJECT REPORT - APPENDICES

VOLUME 3



# APPENDIX D. Market Analysis





### **Economics Research Associates**

Project Report

University of Texas System
Conceptual Master Plan for
Development of the Brackenridge Tract

Prepared for

Cooper, Robertson, and Partners New York, NY

Submitted by

**Economics Research Associates** and Capital Market Research

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# **General & Limiting Conditions**

Every reasonable effort has been made to ensure that the data contained in this report are accurate as of the date of this study; however, factors exist that are outside the control of Economics Research Associates and that may affect the estimates and/or projections noted herein. This study is based on estimates, assumptions and other information developed by Economics Research Associates from its independent research effort, general knowledge of the industry, and information provided by and consultations with the client and the client's representatives. No responsibility is assumed for inaccuracies in reporting by the client, the client's agent and representatives, or any other data source used in preparing or presenting this study.

This report is based on information that was current as of September 2008 and Economics Research Associates has not undertaken any update of its research effort since such date.

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This study is qualified in its entirety by, and should be considered in light of, these limitations, conditions and considerations.



# I. Introduction and Project Overview

ERA has been retained by Cooper, Robertson and Partners (CRP) to assist in the financial and market analysis tasks related to the master plan creation for the Brackenridge Tract in downtown Austin, TX. Our tasks in this draft include:

- Conduct office, residential, and retail market analysis to identify potential for redevelopment of the tract.
- Identify market trends that will have the most significant impact on the redevelopment.
- Prepare absorption forecasts for each use that identified absorption potential of the proposed uses.

Future tasks will focus on:

- Review and provide market and economic input on the plan alternatives
- Prepare a financial model to review the residual land value of the site and the revenue potential based on the plan alternatives
- Identify implementation options and economic sources and hurdles to development, including sources of federal, state and local funding options that can assist the development.
- Participation in future public meetings.

# **Executive Summary**

The following summary of each land use type analyzed in this report highlights the key market findings and trends that will impact the development opportunity at the Brackenridge Tract. A detailed analysis of this summary is provided in the following pages.

### Housing

- Market is on upswing through the past five years, strong developer interest in the area with 8,860 multi-family units planned in the Central Market Area.
- Apartment occupancy is currently at 88.7% and expected to improve.
- Based on historic development patterns and short and long-term projections, demand for multifamily housing on-site will total 2,300 units by 2027, at an average annual absorption of approximately 153 units per year starting in 2012.

### Office

 Growth of the economy, especially in office intensive sectors, indicates near-term increase in demand for office space as employment increases.



- Vacancy rates have decreased and the downtown area market is currently competitive after a soft-market period 5 years ago.
- Currently the West Central submarket, where the Brackenridge Tract is located, is a small office
  market that accounts for only 3 percent of office space in the city and is largely a small office
  sector within the central area region.
- Assuming a reasonable employment growth rate and an increasing share of demand moving into the West Central Austin submarket, office demand will total 732,000 square feet through 2023, at an average annual absorption rate of 48,800 square feet.

### Retail

- The retail analysis focused on two primary trade areas surrounding the site and measured retail household spending.
- Currently \$378 million in retail sales in the trade areas per year, a large part due to the recently opened a Whole Foods flagship store at 6<sup>th</sup> and Lamar.
- By capturing a share of the spending within the West Austin neighborhood and from new household that could be developed on site, retail demand analysis identifies support for 138,500 to 207,240 square feet of on-site demand for new retail development.
- The retail demand shows strong demand for restaurants and for small store formats that will serve the local neighborhood and on-sire development.

### Hotel

- The hotel market is increasingly strong with strong occupancy levels and, though low, increasing average daily rates.
- The downtown market is strong with the Convention Center is driving significant growth for the hotel market.
- A strong pipeline of development will meet this demand in the short and medium-term in the Central Business District market.
- In the long-run, as average daily rates increase in the Central Business District, hotel development opportunities could appear in emerging markets surrounding the downtown.
- In the long-term, at year eight or later, the demand could emerge for a mid-scale hotel with 150-170 rooms. Over the longer-term, it is unlikely that the site could support more significant hotel development.



## **II. Housing Market Analysis**

# **Austin Apartment Market Overview**

Traditionally, apartment projects in Austin have been clustered near activity centers, major employers, and the university areas. Examples of this phenomenon include the cluster of apartments near IBM, Dell, Abbott Labs, and Seton Hospital as well as the apartments surrounding the University of Texas, St. Edwards University, and the various Austin Community College campus locations. The Central Business District has, until recently, relatively few residential rental units, but three new apartment communities have been developed, in the CBD and there are more currently under construction.

### **Historical Market Trends**

Market conditions in the Austin area multifamily market were volatile in the eighties, when an apartment construction boom caused dramatic overbuilding in 1985 and 1986, which was followed by several years of inactivity. After dropping to 80 percent occupancy in the mid-eighties, occupancy rates steadily increased, and by 1990, rapid rent escalation was underway. However, it was not until 1993 that overall market rental rates were high enough to support widespread construction activity.

As Austin's economy experienced robust growth in the early nineties, the resurgence of multifamily construction began in 1991 when 148 units were constructed and 220 units were absorbed. At that time citywide occupancy was at 93.7 percent and apartments leased for an average \$0.57 per square foot. From that period through mid-1996, average rent per square foot and absorption accelerated dramatically. Occupancy first peaked in December 1994 at 97.4 percent, and then again in June 2000 (at 98.2 percent), while new unit completions peaked in 1996 at 6,405 units and then again at 8,472 in 2001. Since 1996, the pace of new construction fluctuated from year to year, but both occupancy and average rental rates increased steadily through the end of 2000.

In 2001, for the first time in many years, new unit completions dramatically exceeded absorption and the market plunged from 97.6 percent in January to 90.0 percent by the end of the year. Rents dropped precipitously, but the building continued into 2002, in spite of the softness in the market, and by 2003 the construction boom was tapering off.



### **Current Market Conditions**

Beginning in late 2003, new construction activity began to diminish and regional apartment demand regained strength and has continued the positive absorption trend through 2004, 2005, 2006 and 2007. Based on the CMR 2008 mid-year survey of 131,624 apartment units, the market occupancy rate decreased in the first six months of 2008 (1.9 percentage points) to an occupancy rate of 94.7 percent with rental rates increasing \$0.01 to \$0.97 per square foot. Since the beginning of 1992, 64,792 apartment units in 236 complexes were completed including 25 completed in 2003 (4,912 units), 9 in 2004 (2,262 units), 8 in 2005 (1,819 units), 16 in 2006 (2,993 units) and 17 in 2007 (4,320 units). As of June 2008, ten projects (3,468 units) were completed. An additional 64 projects are currently under construction, with 13 partially completed and leasing.

In 2004, unit demand, as measured by absorption, exceeded new unit completions by 1,979 units, and in 2005 demand exceeded new unit completions by 4,424. The lack of new construction has allowed existing units to be absorbed by the market. For the first time since 2000, rental rates increased in June 2005 to \$0.82, and occupancy increased to 92.7 percent. Since then, rents and occupancy have continued to increase and in December 2007, rents were reported at \$0.96 per SF and the market was 96.6 percent occupied. New unit completions were 3,416 and absorption was 5,562 in 2007. The table on the following page provides apartment market conditions from 1991 through June 2008. Historical data on occupancy, average rent, unit completions, and absorption for 1991 through June 2008 is taken from CMR's Austin Apartment Survey, a semi-annual survey of all projects of more than 50 units in the Austin area.

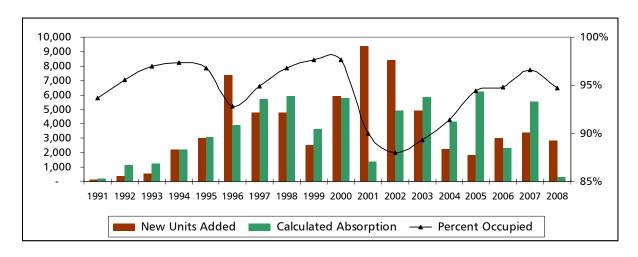


Table 1: Austin Apartment Summary 1991 - June 2008

	Total	Occupied	Percent	New Units	Calculated	Rent per	
Date	Units	Units	Occupied	Added	Absorption	SF	Trends
1991	61,113	57,266	93.70%	148	220	\$0.57	Positive
1992	61,118	58,448	95.60%	348	1,160	\$0.64	Positive
1993	63,074	61,174	97.00%	594	1,229	\$0.71	Positive
1994	66,379	64,662	97.40%	2,178	2,212	\$0.75	Positive
1995	69,324	67,101	96.80%	3,010	3,098	\$0.79	Positive
1996	77,019	71,452	92.80%	7,384	3,882	\$0.81	Caution
1997	81,382	77,270	94.90%	4,770	5,697	\$0.82	Positive
1998	86,428	83,683	96.80%	4,778	5,929	\$0.86	Positive
1999	89,699	87,531	97.60%	2,499	3,643	\$0.91	Positive
2000	96,114	93,786	97.60%	5,923	5,773	\$0.98	Positive
2001	105,162	94,651	90.00%	9,351	1,368	\$0.94	Caution
2002	113,380	99,794	88.00%	8,432	4,925	\$0.86	Caution
2003	120,169	107,290	89.30%	4,912	5,828	\$0.81	Positive
2004	122,323	111,786	91.40%	2,262	4,133	\$0.81	Positive
2005	124,325	117,389	94.40%	1,819	6,243	\$0.85	Positive
2006	126,842	120,304	94.80%	2,993	2,356	\$0.91	Positive
2007	128,900	124,558	96.60%	3,416	5,562	\$0.96	Positive
2008	131,624	124,597	94.70%	2,811	329	\$0.97	Caution

Source: Capitol Market Research, 1991 - June 2008 Apartment Market Survey; CMR estimates of new completions based on surveys of property managers and owners, 2008.

Figure 1: Historical Absorption and New Units Added





### **Austin Apartment Demand Overview**

Rapid population growth in Austin and other U.S. cities is almost always attributable to the immigration of people from other areas, often because of job opportunities. The demonstrable growth in employment and a fairly low unemployment rate (4.4 percent for the Austin MSA as of July 2008) means that as new jobs are created, people will move into the region to take those jobs.

The table on the following page (see Table 2) provides an estimate of new rental units needed as a result of the job increases anticipated over the next twenty years. Since, rental unit demand is divided among different types of rental housing, we have estimated multi-family unit demand to be 91.5 percent of the total rental unit demand and will average 6,770 units per year from 2008 through 2027, ranging from an annual average of 5,180 units of demand from 2008 to 2012 increasing to 8,519 units of demand annually from 2023 to 2027.

Table 2: Housing Demand, Austin MSA

Year	Employment Increase	Population Increase	Household Size	New Households	New Renter Households	MF Demand
2008	13,186	25,455	2.57	9,905	3902	3,571
2009	18,979	36,639	2.57	14,257	5617	5,140
2010	21,638	41,772	2.57	16,254	6404	5,860
2011	21,046	40,630	2.57	15,809	6229	5,699
2012	20,791	40,136	2.57	15,617	6153	5,630
2013	20,853	40,256	2.57	15,664	6172	5,647
2014	21,327	41,172	2.57	16,020	6312	5,775
2015	21,832	42,147	2.57	16,400	6461	5,912
2016	24,359	47,025	2.57	18,298	7209	6,596
2017	25,021	48,304	2.57	18,795	7405	6,776
2018	25,702	49,617	2.57	19,306	7607	6,960
2019	26,401	50,968	2.57	19,832	7814	7,150
2020	27,120	52,355	2.57	20,372	8026	7,344
2021	27,858	53,781	2.57	20,926	8245	7,544
2022	28,617	55,246	2.57	21,496	8470	7,750
2023	29,397	56,752	2.57	22,082	8700	7,961
2024	30,199	58,299	2.57	22,684	8938	8,178
2025	31,022	59,889	2.57	23,303	9181	8,401
2026	31,869	61,523	2.57	23,939	9432	8,630
2027	32,739	63,202	2.57	24,592	9689	8,866

Source: Employment Forecast from Table (2) Population to employment ratio held constant at 0.518 Household size assumed to remain constant at 2.57 Renter demand of 39.4% based on 2000 tenure split Multi-family demand assumed to be 91.5% of renter demand



### **Citywide Absorption and Occupancy Forecast**

In conjunction with the development of a market area and project specific occupancy forecast, it is instructive to also review the citywide trends. In a remarkable recovery from the dot.com bust and negative employment growth in 2002 and 2003, job growth in the Austin MSA has been positive the last four years with 14,400 jobs added in 2004, 24,800 added in 2005, 31,000 added in 2006, and 34,100 added in 2007. According to local and national economic forecasts job growth is expected to be somewhat slower over the next two to three years, resulting in employment increases of approximately 2.36 percent through 2010. Based on these job growth forecasts, the annual demand for apartment units shown in Table 27 shows absorption in 2008 of 3,571 followed by absorption of 5,140 in 2009 and 5,860 in 2010.

Due to the downturn in employment and decrease in occupancy in the recent past (2002-2003), the number of units added annually decreased dramatically in 2004 and 2005. As a result, citywide occupancy increased to 94.4 percent by the end of 2005 and to 94.8 percent by the end of 2006. In 2007, the number of units absorbed greatly exceeded the number of units delivered and occupancy increased to 96.6 percent. However, annual completions are expected to increase in 2008 (9,586 units) and 2009 (7,991 units), resulting in a decrease in occupancy to 92.8 percent by the end of 2008 and decreasing further to 91.2 percent in 2009. Average rental rates are expected to reflect a "softer" market with average rents holding steady at \$0.96 through 2008 and decreasing significantly to \$0.92 in 2009. In 2004 and 2005, more units were absorbed than were completed, causing a steady increase in occupancy over that 24 month period. However, in 2006, this trend reversed and unit delivery exceeded absorption. In 2007, the number of units absorbed exceeded the number of units delivered by 2,146. However, this is not expected again in 2008 with 9,586 units planned for delivery. However, occupancy for year-end should remain relatively high and if all the units are completed as scheduled, the occupancy will decrease to 92.5 percent by the end of the year.



Table 3: Citywide Apartment Summary Forecast 1991 - 2010

	Total	Occupied	Percent	New	Calculated	Rent	
Date	Units	Units	Occupied	Completions	Absorption	per SF	Trends
1991	61,113	57,266	93.70%	148	220	\$0.57	Positive
1992	61,118	58,448	95.60%	348	1,160	\$0.64	Positive
1993	63,074	61,174	97.00%	594	1,229	\$0.71	Positive
1994	66,379	64,662	97.40%	2,178	2,212	\$0.75	Positive
1995	69,324	67,101	96.80%	3,010	3,098	\$0.79	Positive
1996	77,019	71,452	92.80%	7,384	3,882	\$0.81	Caution
1997	81,382	77,270	94.90%	4,770	5,697	\$0.82	Positive
1998	86,428	83,683	96.80%	4,778	5,929	\$0.86	Positive
1999	89,699	87,531	97.60%	2,499	3,643	\$0.91	Positive
2000	96,114	93,786	97.60%	5,923	5,773	\$0.98	Positive
2001	105,162	94,651	90.00%	9,351	1,368	\$0.94	Caution
2002	113,380	99,794	88.00%	8,432	4,925	\$0.86	Caution
2003	120,169	107,290	89.30%	4,912	5,828	\$0.81	Positive
2004	122,323	111,786	91.40%	2,262	4,133	\$0.81	Positive
2005	124,325	117,389	94.40%	1,819	6,243	\$0.85	Positive
2006	126,842	120,304	94.80%	2,993	2,356	\$0.91	Positive
2007	128,900	124,558	96.60%	3,416	5,562	\$0.96	Positive
2008	138,486	128,129	92.50%	9,586	3,571	\$0.96	Caution
2009	146,477	133,269	91.00%	7,991	5,140	\$0.92	Caution
2010	150,103	139,129	92.70%	3,626	5,860	\$0.91	Positive

Source: Capitol Market Research, 1991-2007 Apartment Market Survey CMR estimates of new completions based on a review of city documents and developer plans Absorption based on forecasted population increase from employment forecast generated using an econometric forecast for the Austin MSA obtained from Texas Perspectives

### **Central Market Area Apartment Market Conditions**

In June 2008, Capitol Market Research surveyed the 54 apartment communities in the Central Market Area with a total of 5,802 units. Currently, the market area occupancy is 88.7 percent, which is down 8.4 percentage points from December 2007, when it was 97.1 percent. However, five new properties have begun leasing since December 2007, which has caused occupancy to drop. The "stabilized" occupancy rate is currently 93.5 percent. Average rents are \$1.1.63 per square foot, which is up 4.5 percent since December 2007 when it was \$1.56. Of the 5,802 total units, 2,761 (44.6%) have been built (completed) since the beginning of 2000.

### **New Construction**

New construction in the Central Market Area has continued, due to the strong demand from downtown employees and those "lifestyle" renters who prefer downtown or a more urban rental



arrangement. Among the new completions in the market area are several class "A" market rate projects, including 300 N Lamar, 404 Rio Grande, AMLI Downtown, AMLI on Second, Gables West Avenue, The Monarch, Red River Flats, The Triangle Lofts and The Triangle Phases I and II. These properties are leasing well at an average rent of \$1.92 per SF, 17.8 percent above the market area average. Occupancy among the class "A" properties is currently 71.4 percent. It is important to note, however, that there are currently five properties (300 N. Lamar, AMLI on Second, Red River Flats, The Monarch and The Triangle Lofts) in "lease up".

### Occupancy

Occupancy rates dropped from 99.1 percent in December 2000 to 96.7 percent in 2001 and continued to drop even further in 2002 to 95.4 percent and to a low of 92.1 percent in 2003. Since that time however, the occupancy rate has rebounded quickly and increased to 92.7 percent in December 2004, 94.2 percent in December 2005, 96.0 percent in December 2006 and 97.1 percent in December 2007. Most recently, overall occupancy has decreased to 88.7 percent (June 2008) due to the completion of five new projects that are still in lease-up; 300 N. Lamar, AMLI on Second, Red River Flats, The Monarch and The Triangle Lofts. However, the "stabilized" occupancy rate among the 49 remaining projects is 93.5 percent.

### **Average Rents**

Average rents in the Central Market Area rose dramatically from \$1.26 in December 2005 to \$1.56 in December 2007, a 23.8 percent increase over a two-year period. Currently, the average rent per square foot for the market area is \$1.63 (July 2008), 4.5 percent higher than December 2007. As noted above, the new construction product has generally outperformed the market, achieving higher rents (\$1.92 per SF) and (after "stabilizing") maintaining higher than average occupancy.

### **Market Outlook**

The market area has experienced a rapid increase in occupancy from a low of 92.1 percent in 2003 and average rents have continued to climb. There are a significant number of new units currently under construction in the Central Market Area, 1,769 units planned for delivery in 2008 and 1,425 planned in 2009, 1,308 planned in 2010, and 984 units planned for delivery in 2011. In a suburban market location, the large number of completions would cause a decline in average rents; however, based on historical rent and occupancy, particularly among the newer properties, rents are expected to remain high with little erosion in occupancy in the Central market area.



**Table 4: Central Market Area Historical Occupancy** 

Year	Number of Units	Units Occupied	Occupancy Rate	Rent per SF	Units Added	Annual Absorption
2000	3,707	3,674	99.10%	\$1.16		
2001	3,872	3,744	96.70%	\$1.17	165	71
2002	4,112	3,923	95.40%	\$1.15	240	179
2003	4,373	4,028	92.10%	\$1.14	261	105
2004	4,506	4,177	92.70%	\$1.23	133	150
2005	4,704	4,431	94.20%	\$1.26	198	254
2006	4,882	4,687	96.00%	\$1.39	178	256
2007	5,360	5,205	97.10%	\$1.56	478	518
2008*	5,802	5,146	88.70%	\$1.63	442	-58

Source: Capitol Market Research, 2000-May 2008 Apartment Market Survey

### Central Market Area Multifamily Demand Forecast

Between 1990 and 2000, the subject market area captured only 1.34 percent of the increase in population in the Austin MSA. However, between 2000 and 2008, 7.79 percent of all new apartment units built in the Austin region were located within the Central Market Area, according to the City of Austin building permit data and Capitol Market Research's annual Apartment Market Survey of the Austin Region. We believe that a market share of 7.79 percent is more realistic of the market potential for redevelopment over the next twenty years. Therefore, a 7.79 percent proportionate capture rate applied to the population forecast generated from future employment growth yields an average population growth for the subject market area of 3,761 people per year from 2008 through 2027. We estimate that the tenure split will remain at approximately 65.0 percent, which was the percentage of renters in the market area report in the 2000 US Census.

Based on the large number of major employers in the area, primarily the State of Texas and the University of Texas at Austin, along with all of the employers located in and around the downtown area, this market area will continue to be an attractive area for employees and their families that rent. And of course the University of Texas students continue to generate a strong influence on the rental market by campus. By using the forecast described above and assuming a maintenance of the current household size, an estimated new multi-family housing demand which averages 1,196 units per year through 2027 is indicated, as shown in Table 5 on the following page.



Table 5: Multifamily Unit Demand, Central Market Area

	Forecaste			A				
	d MSA Populatio	Capture	New	Avg HH	New	%	%	Multifamily
Year	n Growth	Rate	Population	Size	HH	Renter	Multifamily	Demand
2008	25,455	7.79%	1,984	1.87	1,061	65.00%	91.50%	631
2009	36,639	7.79%	2,856	1.87	, 1,527	65.00%	91.50%	908
2010	41,772	7.79%	3,256	1.87	, 1,741	65.00%	91.50%	1,036
2011	40,630	7.79%	3,167	1.87	1,693	65.00%	91.50%	1,007
2012	40,136	7.79%	3,128	1.87	1,673	65.00%	91.50%	995
2013	40,256	7.79%	3,138	1.87	1,678	65.00%	91.50%	998
2014	41,172	7.79%	3,209	1.87	1,716	65.00%	91.50%	1,021
2015	42,147	7.79%	3,285	1.87	1,757	65.00%	91.50%	1,045
2016	47,025	7.79%	3,665	1.87	1,960	65.00%	91.50%	1,166
2017	48,304	7.79%	3,765	1.87	2,013	65.00%	91.50%	1,197
2018	49,617	7.79%	3,867	1.87	2,068	65.00%	91.50%	1,230
2019	50,968	7.79%	3,972	1.87	2,124	65.00%	91.50%	1,263
2020	52,355	7.79%	4,081	1.87	2,182	65.00%	91.50%	1,298
2021	53,781	7.79%	4,192	1.87	2,242	65.00%	91.50%	1,333
2022	55,246	7.79%	4,306	1.87	2,303	65.00%	91.50%	1,370
2023	56,752	7.79%	4,423	1.87	2,365	65.00%	91.50%	1,407
2024	58,299	7.79%	4,544	1.87	2,430	65.00%	91.50%	1,445
2025	59,889	7.79%	4,668	1.87	2,496	65.00%	91.50%	1,485
2026	61,523	7.79%	4,795	1.87	2,564	65.00%	91.50%	1,525
2027	63,202	7.79%	4,926	1.87	2,634	65.00%	91.50%	1,567

Prepared by: Capitol Market Research, August 2008

Notes: Population forecast based employment forecast shown in Table (10). Capture rate based on average market area share of total apartment units in the greater Austin area from 2000 through 2008 per Capitol Market Research Annual Survey. Household size from 2000 Census data. Tenure split set at 2000 rate for market area, percent multifamily includes condominiums and is based on recent city building permit data.

### **Planned Projects in the Central Market Area**

Currently, the overall occupancy rate in the Central Market Area is 88.7 percent, which is 6 percent lower than the Austin area average (94.7 percent) in June 2008. However, it is important to point out that there are currently five properties in lease-up (300 N. Lamar, AMLI on Second, Red River Flats, The Monarch and The Triangle Lofts). Further, the survey was conducted in June, a time when occupancy rates among student-oriented properties are lower than during the school year because many students leave the area during the summer months. The occupancy rate among the "stabilized" market area properties is 93.5 percent. Therefore, the multi-family units in the proposed project will be competing primarily with the undeveloped tracts in the market area that are zoned for multifamily use and that may be developed with apartments within the forecast time period. Recent interviews with the City of Austin Planning Department, and local brokers and market research firms,



revealed 33 competitive sites for multifamily construction, including the subject site. Sites are defined as being "competitive" if the land is currently zoned appropriately for multifamily development and utilities are available. In order to be considered as immediate and direct competition, the identified site must either be held by or under contract to a developer with known intention to move forward with a multifamily project.

The annual additions to the market area resulting from the development of this potential inventory of multifamily units may vary based on the capacity of the apartment developer to obtain the necessary construction financing and city approvals. It is also possible that other projects not currently in the planning stage could be quickly developed and brought to the market. Thus, the list of planned additions is both actual; because it represents current plans, and representative, because it presents a position that the subject project will be competing with other new apartment projects during the anticipated development horizon.

**Table 6: Planned Multifamily Central Market Area** 

•		Planned					
Project Name	Location	Units	Acreage	Developer	Current Status		
21 Rio	2101 Rio Grande	158	0.4	Cobalt	Under Construction		
21st and Pearl	21st and Pearl	72	0.9	R3E, LLC	Closed		
22nd and San Antonio High Rise	22nd and San Antonio	306	1.1	Cobalt Steel Blue	Under Contract		
5350 Burnet Road	5350 Burnet Road	165	2.5	Ardent Residential	Closed		
Altavida	101 Colorado	259	1.3	Hanover	<b>Under Construction</b>		
AMLI East Avenue I	3400 IH-35	283	2.5	AMLI	Under Contract		
AMLI East Avenue II	3400 IH-35	330		AMLI	Under Contract		
AMLI East Avenue III	3400 IH-35	330		AMLI	Under Contract		
Block at Rio Grande	2819 Rio Grande	97	0.7	CWS	<b>Under Construction</b>		
Block on 23rd	2222 Pearl St.	92	1	CWS	<b>Under Construction</b>		
Block on 25th East	2501 Pearl St.	114	0.6	CWS	<b>Under Construction</b>		
Block on 25th West	702 W. 25th St.	167	1	CWS	<b>Under Construction</b>		
Block on San Pedro	2600 San Pedro	155	0.9	CWS	Closed		
Brackenridge Tract	Lake Austin Blvd.	2300	345	tbd	Closed		
Buckingham Square	711 W. 32nd St.	77	1.3	Arbor Commercial Mortgage	<b>Under Construction</b>		
Camden North Lamar	5300 N. Lamar	290	4.8	Camden Property Trust	Closed		
Cesar Chavez and Red River	Cesar Chavez and Red River	322	2.3	Poe Companies	Under Contract		
Cityville at Pearl	706 MLK Blvd	101	1.1	First Worthing	Closed		
Gables 5th Street Commons	1603 W. Fifth St.	146	3.2	Gables	<b>Under Construction</b>		
Gables at Pressler	Fifth St. at Pressler	160	2	Gables	<b>Under Construction</b>		
Gables Park Plaza	901 W. Cesar Chavez	300	5.1	Gables	<b>Under Construction</b>		
Gables Republic Park	401 Guadalupe St.	221	1.3	Gables	Closed		
House of Tutors	2400 Pearl	83	0.7	Malik	Closed		
Jefferson 26	26th and Nueces	366	4.8	JPI	<b>Under Construction</b>		
Jefferson Longview	2505 Longview	165	1.6	JPI	Closed		
Legacy Town Lake	Rainey St.	184	0.7	Legacy Partners	<b>Under Construction</b>		
Post Bull Creek	4320 Bull Creek Rd.	329	4.4	Ardent	<b>Under Construction</b>		
Quarters Bandera House	2209 Rio Grande	125	0.6	Simmons Vedder	Closed		
Quarters Grayson House	714 W. 22nd St.	101	1.2	Simmons Vedder	<b>Under Construction</b>		
Quarters Nueces House	2300 Nueces	235	1.1	Simmons Vedder	<b>Under Construction</b>		
Red River Flats	901 Red River	120	1.3	Greystar Multi-Family	<b>Under Construction</b>		
Texan Pearl	2502 Leon St	98	0.7	Mitch Ely	<b>Under Construction</b>		
The Monarch	801 W. 5th St.	304	2	Zom	<b>Under Construction</b>		
Triangle Ph III	4510 Guadalupe St.	230	1.45	Simmons Vedder	Closed		
The Venue on Guadalupe	2811 Guadalupe St.	75	0.72	First Worthing Complete/Leasing/Vacant			
Total Units	_		8,860				

Source: Capitol Market Research, Developer and Broker Interviews, June 2008



Table 7: Planned Multi-Family, Central Market Area

Project Name	UNITS	2008	2009	2010	2011	2012	Future
21 Rio	158		158				
21st and Pearl	72		72				
22nd and San Antonio High							
Rise	306				306		
5350 Burnet Road	165		40	125			
Altavida	259		259				
AMLI East Avenue I	283				283		
AMLI East Avenue II	330						330
AMLI East Avenue III	330						330
Block at Rio Grande	97	97					
Block on 23rd	92	92					
Block on 25th East	114	114					
Block on 25th West	167	167					
Block on San Pedro	155			155			
Brackenridge Tract	2300					250	2050
Buckingham Square	77		77				
Camden North Lamar	290			290			
Cesar Chavez and Red River	322				322		
Cityville at Pearl	101						101
Gables 5th Street Commons	146		146				
Gables at Pressler	160		160				
Gables Park Plaza	300			300			
Gables Republic Park	221			148	73		
House of Tutors	83						83
Jefferson 26	366	366					
Jefferson Longview	165			165			
Legacy Town Lake	184		184				
Post Bull Creek	329		329				
Quarters Bandera House	125			125			
Quarters Grayson House	101	101					
Quarters Nueces House	235	235					
Red River Flats	120	120					
Texan Pearl	98	98					
The Monarch	304	304					
Triangle Ph III	230						230
The Venue on Guadalupe	75	75	•••	•••	•••	•••	
Total New Units	8,860	1,769	1,425	1,308	984	250	3,124
Total Annual Demand*	0,000	698	887	1,045	1,006	995	3,124
Annual Surplus/Deficit	_	330	507	1,045	1,000		
Demand	1,071	-538	-263	22	745		
Cumulative Annual	-						
Surplus/Deficit Demand	1,609	-801	-241	767			

Source: Capitol Market Research Developer/Broker Interviews June 2008



### **Market Area and Subject Absorption Forecast**

It is estimated that the market area will show an annual demand for new apartment units from 2008 through 2012 of approximately 915 units, increasing to 1,085 units from 2013 through 2017, 1,299 units from 2018 to 2022 and 1,486 units from 2023 to 2027. The timing of the previously mentioned planned projects is shown in **Table 7**. The annual Deficit/Surplus shows the gap between forecasted demand and the number of planned units brought to market from 2008 to 2012. Combining the current market conditions with the plans for new unit construction developed in the previous section, an absorption analysis for the market area and subject project can be developed and is shown in Table 8.

**Table 8: Subject Absorption Forecast, Central Market Area** 

Year	Multifamily Demand*	Units Added	Subject Units		Proportionate Market Share		npetitive Market Share	Average Market Share	Subject Absorption	
2008	631	1,769	0							
2009	908	1,425	0							
2010	1,036	1,308	0							
2011	1,007	984	0							
2012	995	250	250		100%		100%	100%		250
2013	998	0	0							
2014	1,021	250	250		100%		100%	100%		250
2015	1,045	0	0							
2016	1,166	300	300		100%		100%	100%		300
2017	1,197	0	0							
2018	1,230	300	300		100%		100%	100%		300
2019	1,263	0	0							
2020	1,298	300	300		100%		100%	100%		300
2021	1,333	0	0							
2022	1,370	300	300		100%		100%	100%		300
2023	1,407	0	0							
2024	1,445	300	300		100%		100%	100%		300
2025	1,485	0	0							
2026	1,525	300	300		100%		100%	100%		300
2027	1,567	0	0							
Total	7,786	2,300	2,300	•			•			

Prepared by: Capitol Market Research, August 2008



### **III. Office Market**

### **Austin Office Market Overview**

The office market in Austin has over the last 20 years, evolved from a relatively small government-oriented market to a much larger and more diverse multi-tenant market. In 1980, the multi-tenant office market in Austin contained approximately 5.4 million square feet of space in 77 buildings. By 1987, the market had expanded fourfold to include more than 22 million square feet in 251 buildings. Today, the Austin market in total includes 67.6 million square feet of space in 2,415 buildings.

Reflecting the traditional government focus and the location of the State Capitol Building, historically a majority of office space was concentrated in Downtown Austin. In recent years, however, suburban office development has dominated the market since almost 100 percent of the space built during the nineties was constructed in the suburban market. From 1993 to 1999, a majority of leasing activity also took place in the suburbs, and until the first quarter of 2001, the suburban markets displayed remarkable strength, with almost every new building fully leased when it received a certificate of occupancy.

### **Historical Market Trends**

Austin, like many other cities in Texas, experienced an unprecedented boom in office space construction and absorption in the mid-eighties. Driven by a rapidly expanding economy and media attention associated with the formation of MCC (Microelectronics & Computer Technology Corporation, a consortium of high tech businesses, working together to create innovative technology), office absorption in 1984 surged to 2.56 million square feet. From 1983 to 1987, the inventory of general-purpose office space increased by 128 percent, a dramatic expansion caused by a massive construction boom. Unfortunately, the downturn in the Texas economy coupled with slow growth in the computer industry caused declines in office employment and absorption of the new space. In 1987, Austin had one of the lowest occupancy rates in the country at 62.6 percent.

With increasing occupancy and improving rental rates, 1990 was the turnaround year for the Austin office market. Government agencies led the market recovery as entities like the Austin Independent School District, Austin Community College, and the State of Texas purchased vacant multi-tenant office buildings, removing them from the available inventory. This trend continued through 1992, and in 1993 and 1994 private companies initiated a similar trend as they bought and occupied suburban office buildings. From 1995 through the end of 2000, the market expansion gained strength as rental rates increased and new buildings were completed and fully leased at completion. By the end of



2001, however, the market had taken a dramatic turn, which continued into 2002 and 2003. During the last four years market conditions have gradually improved, which has led to an increase in rental rates and a remarkable surge in new construction.

### **Employment Growth**

Employment has grown strongly in Tarrant County since the beginning of the decade, with over 80,000 new jobs being added (many of these jobs being added between 2004 and 2008; the county experience negative job growth in 2000 through 2004, a result of the dot.com bust and large employment losses in the manufacturing sector). Through the next 15 years employment within the county is projected to increase an additional 36.7 percent from 756,270 to 1,033,480 in 2023, at a compound annual growth rate of 2.1 percent. Finance/Insurance/ Real Estate, Services, and Government sectors, the highest percentage of office users, are expected to increase employment by 217,622 jobs in the next fifteen years, growth that will drive absorption and create the need for more office space. Agricultural sector employment is projected to experience the slowest growth, and mining sector employment is projected to decrease.

Table 9: Employment Projections, Travis County (in 000s of persons)

	Actual	Estimate		Projection	ns		Chang	je: 2008-2	023
		·							CAGR
	2000	2008	2013	2018	2023	_	Amount	%	1/
Agricultural &									
Farm	6.49	6.78	7.59	8.38	9.19		2.41	35.6%	2.0%
Mining	3.63	3.44	3.37	3.29	3.22		-0.21	-6.3%	-0.4%
Construction	39.59	39.19	42.38	45.41	48.41		9.22	23.5%	1.4%
Manufacturing	73.85	61.63	65.82	70.02	74.28		12.65	20.5%	1.3%
Trans./Comm./									
Public Utilities	22.68	23.20	25.38	27.54	29.73		6.53	28.1%	1.7%
Wholesale Trade	27.38	29.41	31.28	32.94	34.55		5.14	17.5%	1.1%
Retail Trade	99.64	106.42	114.60	122.47	130.28		23.86	22.4%	1.4%
Finance/Insurance/									
Real Estate	58.04	72.99	81.96	90.52	99.02		26.03	35.7%	2.1%
Services	229.86	290.48	346.02	399.71	453.86		163.39	56.2%	3.0%
Government (1)	111.31	122.76	132.37	141.68	150.96		28.20	23.0%	1.4%
Total:	672.46	756.27	850.76	941.96	1,033.48		277.21	36.7%	2.1%

<sup>1/</sup> Compound Annual Growth Rate

Source: Woods & Poole; Economics Research Associates, 2008.



### **Downtown and Central Austin Office Market Conditions**

The Austin office market is comprised 2,396 building and nearly 65 million square feet of space. The market is currently in a recovery phase, between January 2000 and December 2002, the market deteriorated rapidly as many pre-profit dot.com companies went out of business and gave up their lease space. Occupancy rates have greatly improved since the market began to recover in 2003, falling from 15.8 percent to 12 percent, dipping as low as 9.3 percent in 2006. There are currently 71 building with 6 million square feet of RBA planned, and 19 buildings with 1.4 million square feet of RBA under construction.

Table 10: Office Market Summary, Select Market Areas, YTD.

Geography	Number of Buildings	Total RBA	Share of Market RBA	Vacancy Rate 1/	Average Rental Rate
Travis County	2,396	65,965,622	-	11.6%	\$25.90/fs
City of Austin	2,415	67,601,692	100.0%	12.0%	\$25.81/fs
CBD	437	13,310,068	19.7%	9.6%	\$31.99/fs
Central	305	4,760,075	7.0%	8.3%	\$22.33/fs
W. Central	197	2,017,421	3.0%	1.9%	\$26.84/fs

<sup>1/</sup> Does not include space available for sublet.

Source: CoStar; Economics Research Associates, 2008.

ERA examined trends for Travis County, the City of Austin, and several CoStar defined office submarkets immediately surrounding the subject site, as the market characteristics of these submarkets will have the greatest implications for development potential. The selected submarkets are:

- The Central Business District (CBD) submarket, bounded by N. Lamar Boulevard to the West, Martin Luther King Jr. Boulevard to the North, I-81 to the East, and the Colorado River to the South.
- The Central Submarket, bounded roughly by the Mopac Expressway and N. Lamar Boulevard to the West, I-893 to the North, I-35 to the East, and E. Martin Luther King Jr. Boulevard to the South.
- The West Central submarket, bounded by the Colorado River to the West and South, Perry Lane and W. 45<sup>th</sup> Street to the North, N. Lamar Boulevard to the East. The subject site is in this submarket.



Austin City boundaries extend slightly outside of Travis County, into Williamson and Hays Counties, and therefore this market area represents more space then Travis County alone. Because office demand projections are made on the county level based on employment, ERA has included an analysis of Travis County.

**Figure 2: CoStar Office Submarkets** 

### **Absorption and Occupancy Trends**

Absorption and occupancy trends are important historical characteristics in consideration of a markets future potential. The Austin market has absorbed an average of nearly 1 million square feet of space per year since 2003. Year 2003 represents the end of a downturn in the overall city market, a trend carrying through from 2000 when market trends turned largely negative. From 2003 through 2005, vacancy rates throughout the city steadily declined, before rising again slightly in 2006 and 2007. Vacancy rates in the selected submarkets have fallen sharply since 2003; the West Central submarket has remained very competitive with nearly complete occupancy.



Vacancies in the City of Austin are at 12 percent, generally a market vacancy of 10 to 15 percent can be categorized as well performing, some vacant space is necessary in order to accommodate tenants as they move from aging or obsolete space, upgrade to higher quality space, require more space as their business grows, and for tenants who choose to relocate within the market in order to find more competitive deals as leases expire

Table 11: Absorption Trends, Select Market Areas, 2003 – 2008 YTD

Direct Net Absorption	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 08
Travis County	(1,410,626)	1,396,370	1,283,062	2,829,243	725,689	869,198	964,748
City of Austin	(1,589,698)	1,363,156	1,422,853	2,940,698	817,794	806,529	990,961
CBD	43,225	184,865	177,054	725,183	(32,909)	330,476	219,484
Central	(156,019)	120,165	161,950	104,953	102,450	47,360	66,700
W. Central	(10,343)	(27,429)	11,178	215,891	65,427	19,017	50,945

Source: CoStar; Economics Research Associates, 2008.

Table 12: Occupancy Trends, Select Market Areas, 2003 - 2008 YTD

End of Year Direct Vacancy Rate 1/	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 08
Travis County	15.7%	14.0%	12.8%	9.4%	11.0%	11.6%	12.6%
City of Austin	15.8%	14.2%	12.8%	9.3%	10.8%	12.0%	12.6%
CBD	17.2%	16.1%	16.6%	11.1%	11.5%	9.6%	14.5%
Central	18.1%	16.8%	13.5%	11.3%	9.3%	8.3%	13.8%
W. Central	5.3%	6.8%	6.2%	6.1%	2.9%	1.9%	5.4%

1/ Does not include space available for sublet.

Source: CoStar; Economics Research Associates, 2008.

### **Average Rents**

Average rents for the City of Austin have risen dramatically throughout the past decade. Since 2003, rents increased 39 percent and are currently average \$25.81 per square foot. The CBD commands the highest rents of the selected submarkets at \$31.99 per square foot. The West Central submarket commands rents on average of \$26.84 per square foot, less than the CBD but slightly higher than the city-wide average.

Rental rates by class by submarket are detailed in the appendix tables. Rents vary greatly by this measure, with class A space commanding rents on average of \$30.72 per square foot throughout the city, compared to \$22.94 per square foot for class B space, and \$18.37 for class C space. Supply for



the higher quality more expensive space has exceeded demand with city-wide vacancy for A space currently falling at 15.7 percent compared to 11.4 percent and 5.7 percent for B and C space, respectively.

Table 13: Full Service Rental Rate Trends, Select Market Areas, 2003 - 2008 YTD

Average End of Year FS Rental Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 08
Travis County	\$18.55	\$19.00	\$20.11	\$22.46	\$25.47	\$25.90	\$21.12
City of Austin	\$18.54	\$18.95	\$20.01	\$22.39	\$25.45	\$25.81	\$21.07
CBD	\$21.22	\$21.76	\$22.59	\$24.07	\$28.86	\$31.99	\$23.70
Central	\$16.79	\$17.54	\$18.38	\$18.32	\$21.14	\$22.33	\$18.43
W. Central	\$21.22	\$21.70	\$22.19	\$23.90	\$24.96	\$26.84	\$22.79

Source: CoStar; Economics Research Associates, 2008.

### **New Construction & Market Outlook**

Looking specifically at Downtown and Central Austin, there is only one new office building under construction (Capstar at Compass Plaza), but several "stand alone" office and mixed-use projects are planned. In May 2008, the City entered into an agreement with Southwest Strategies Group to redevelop the Seaholm Power Plant, and that mixed-use project will have approximately 60,000 SF of office space. The Gerald Hines Company recently announced plans to build a 425,000 SF office tower on a block owned by the Austin Museum of Art. After several years, and multiple transactions, Tom Stacy has assembled an entire block at the southeast corner of 6th and Congress where he plans to build two high rise towers, one of which will be an office building. There is also some discussion about the conversion of the planned 500 unit condominium tower on the Post Office site into an office building, or a mixed-use project. Sage Land Company and Capital City Partners recently broke ground on the 115,000 SF "Capstar at Compass Plaza" located on West Fifth Street across the street from Hartland Plaza. And, finally, the city recently selected Trammell Crow to redevelop the Green Water Treatment site, and that project will have approximately 588,000 SF of office space.

As noted above, at the western edge of downtown, Sage Land Company and Capital City Partners recently broke ground on Capstar at Compass Plaza. This 8 story mixed use building, located at the southwest corner of 5th and Campbell, will have 115,000 SF of office space, most (90 percent) of which is already preleased to Compass Bank, Capstar Partners, LLC, DMX, Inc. Harden Health Care, and Andrew Harper, Inc. an upscale travel agency. Another building planned for the west end is the



second phase of the Market District Development. This 87,000 SF building will be located on the south side of 5th Street at North Lamar and will contain 30,000 SF of retail space and 57,000 SF of office. West Elm is the anchor tenant for the retail, and the office space is 100 percent preleased to "Home Way", a single use tenant.

There are additional projects contemplated, but unannounced at this time, and much more speculative in nature.

Table 14: Office Market Deliveries, Select Market Areas, 2003 - 2008 YTD

RBA Delivered	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 08
Travis County	995,590	446,243	629,048	807,493	1,910,839	1,396,066	957,843
City of Austin	961,048	424,416	636,492	812,493	1,988,911	1,808,053	964,672
CBD	644,517	60,000	285,000	0	24,500	83,720	202,803
Central	0	72,876	2,749	0	8,100	0	16,745
W. Central	0	0	0	229,000	0	0	45,800

Source: CoStar; Economics Research Associates, 2008.

Table 15: Office Space Planned and Under Construction, Select Markets, 2003 - 2008 YTD

	Propos	ed	Under Construction			
	# Buildings	RBA	# Buildings	RBA	Preleased	
Travis County	76	6,221,728	21	1,484,859	615,420	
City of Austin	71	6,055,562	19	1,438,799	595,321	
CBD	2	533,450	1	100,000	100,000	
Central	2	270,475	1	40,008	40,008	
W. Central	1	115,016	1	116,000	101,999	

Source: CoStar; Economics Research Associates, 2008.



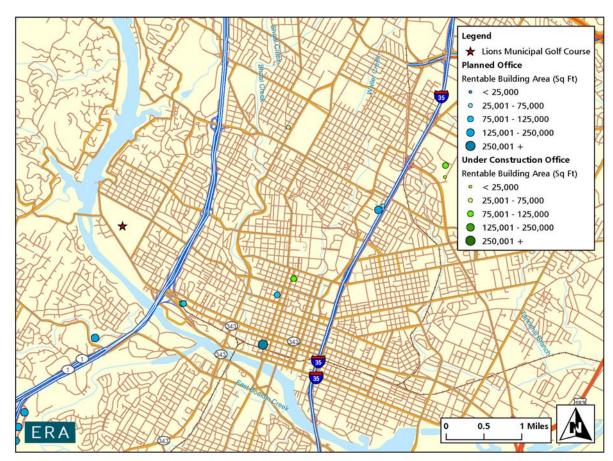


Figure 3: Pipeline Office near Subject Site

# Downtown and Central Austin Market Area and Study Area Absorption Forecast

In order to estimate supportable square footage, on-site, along with an absorption schedule, ERA analyzed both historical absorption trends from the past five years and projected demand increases from incremental employment growth. Office demand for a particular site is measured by marrying county-level historic office market trends and future employment growth and then allocating that county-level demand into each submarket within the county. The historic market trends provide a snapshot of trends in the office market affecting growth, while employment forecasts show the how many new employees will use office space in the future.

Historical office absorption trends show that the West Central submarket, where the site is located, on average accounts for 5 percent of the total annual absorption in Travis County. The West



submarket has very low vacancy and since 2003 has only added additional inventory of 229,000, in 2006. Because the market is tight and relatively small when compared to the county (accounting for only about 3 percent of total inventory) there may be underlying demand not immediately evident by these figures since this submarket is somewhat constrained by large residential neighborhoods and a less known office market. Although, the submarket has historically captured 15 percent of total absorption within the submarket group, new development at this site could increase this figure.

Using historical office market trends at the county and submarket levels, demand in the West Central Austin submarket would reach 1.18 million square feet of space over the next 15 years, at an average annual absorption rate of 78,700 square feet. This approach provides a snapshot of the past and current development patterns but may not fully capture the future growth opportunity in the submarket.

County-wide employment is expected to grow by 36.7 percent in the next 15 years; a large portion of these new employees will require office space, and therefore will create demand for new office development. ERA analyzed each occupational category and estimated the average number of employees in each category who will require traditional multi-tenant office space. Using the total expected number of new office employees and applying a requirement of 250 square feet per new employee results in a county-wide demand forecast for new office square footage.

The final employment-based demand estimate, narrowed to the likely share captured in the West Central Austin submarket, finds demand for 3.00 million square feet of space over the next 15 years, at an average annual absorption of 200,200 square feet per year, a significantly higher forecast than that based on historical averages. The final demand estimate, an average of the historical absorption-based and employment growth-based demand estimates, finds that the submarket can potentially capture 2.09 million square feet of office space through 2023; an average annual absorption of 139,500 square feet per year.

This demand forecast for the study area is the entire regional share of office development that will likely be completed in the West Central Austin submarket. It is unrealistic to assume that all of that demand will be captured at a single location and more likely that it will be distributed through several projects in the area. To develop a final demand projection for the Brackenridge Tract, a realistic site capture rate of 35 percent applied to the submarket demand total results in a likely site development opportunity of 48,800 square feet per year or 732,000 square feet of space through 2023.



**Table 16: Office Space Demand and Absorption Schedule** 

	Travis County	Central Austin Submarket Group	West Central
Total Inventory (SF)	65,965,622	20,087,564	2,017,421
Vacant Space (SF)	7,635,319	1,708,395	39,096
Under Construction (SF)	1,484,859	256,008	116,000
Pre-Leased (%)	40%	95%	88%
Total Vacant & New Inventory	8,524,857	1,722,396	53,097
Avg Ann'l Absorption (SF)	964,748	337,128	50,945
As Percent of Travis County	-	35%	5%
As Percent of Downtown Submarket Group	-	-	15%

Travis County Demand	2008-2013	2013-2018	2018-2023	Avg Ann'l
Historic Market Demand (SF)	4,823,738	4,823,738	4,823,738	964,748
Employment-based Demand (SF)	12,574,514	12,133,288	12,176,909	7,376,942
Central Austin Submarket Group Apportionment	2008-2013	2013-2018	2018-2023	Avg Ann'l
Apportioned Growth (%)	34.9%	34.9%	34.9%	35%
Historic Market Demand (SF)	1,685,641	1,685,641	1,685,641	337,128
Employment-based Demand (SF)	4,394,127	4,239,942	4,255,185	859,284
Average Apportionment	3,040,000	2,963,000	2,970,000	598,200
West Central Apportionment	2008-2013	2013-2018	2018-2023	Avg Ann'l
Apportioned Growth (%)	20.0%	25.0%	25.0%	23.3%
Historic Market Demand (SF)	337,128	421,410	421,410	78,663
Employment-based Demand (SF)	878,825	1,059,985	1,063,796	200,174
Average Apportionment	608,000	741,000	743,000	139,467
Project Capture (35%)	2008-2013	2013-2018	2018-2023	Avg Ann'l
Capture - Market Demand (SF)	117,995	147,494	147,494	27,532
Capture - Employment (SF)	307,589	370,995	372,329	70,061
Average Capture (SF)	213,000	259,000	260,000	48,800

Source: CoStar Property Research; Economics Research Associates, 2008



# **IV.Retail Market Analysis**

Retail demand is determined by estimating the total spending potential from particular trade areas or particular spending groups from a greater region at a site and then converting that into supportable square footage. To determine market support for retail at the Brackenridge Tract site, ERA identified primary and secondary trade areas that will draw the majority of consumer expenditures. Using household expenditure estimates developed by ESRI (and based on BLS Consumer Expenditure Survey Data and Census of Retail Trade Data), ERA calculated the total expenditures by retail product type for the designated trade areas and estimated the percentage of annual spending that can be captured from each household. An "In-flow" factor to account for students, tourists, convention visitors, and other persons who may shop at the site, but are not calculated in either the primary or secondary trade areas, was applied to each retail category. Next, a sales productivity factor was applied across 33 retail sub-categories in order to estimate the net new supportable square footage by retail category. Finally, ERA compared estimates of market support in each category to current sales to find the margin of opportunity, commonly referred to as the sales gap/surplus.

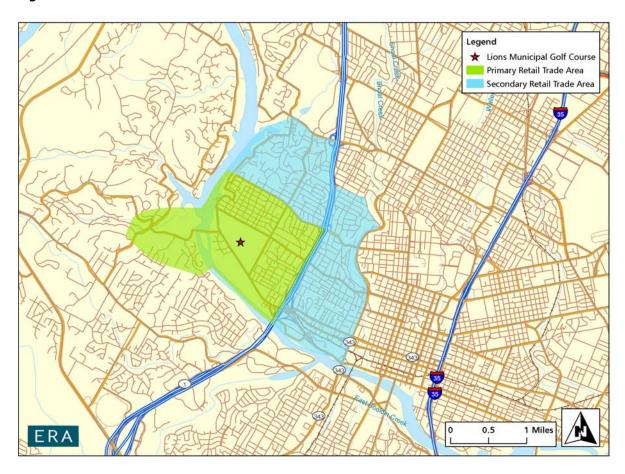
Motor vehicle related sales, including auto-dealerships and gas stations, are excluded from this analysis. The limitations of this research methodology in estimating support for motor-vehicle related retail is that these functions generally draw from a regional customer base which cannot be estimated from spending patterns in the immediately adjacent areas; and, these categories are unlikely to be highly desirable uses in this neighborhood setting.

Sales tax data, the most accurate way to find sales in an area, was not available for this small geography; for that reason, ERA utilized estimates from InfoUSA, a retail sales spending database. The trade area has estimated total annual retail sales of \$378.3 million. Because of the Whole Foods flagship store, located at 6th and Lamar streets, and the existing Randall's grocery on the Brackenridge site, market support for new food and beverage stores will be limited, if at all, and have been excluded from the remainder of the analysis. General and miscellaneous retailers, which generally account for department stores, have the largest dollar amount of support but are insufficient to support the type of big-box department store where these shopping needs are usually met. The greatest opportunity gaps for the site are in the clothing and food and beverage categories.



### **Trade Areas and Inflow**

Figure 4: Retail Trade Areas



Geographically defined retail trade areas are the primary basis of the analysis. The primary retail trade area roughly encompasses all areas within a two and one half minute drive. This trade area represents a close proximity neighborhood most within walking distance to the site and likely to draw a lot of convenience spending in the neighborhood. The secondary trade area encompasses roughly all area within a five minute drive, and does not include the primary trade area. The secondary area would be considered outside walking distance, but within a reasonably convenient distance to the site. In addition, to the trade area households, ERA also included a maximum development program of 2,300 units at the site, the demand-based program developed through the residential analysis by Capital Market Research. The potential on-site households were analyzed using the same assumed characteristics as the households in the existing primary trade area. An "in-flow" factor for transient customers is calculated as an additional level of spending from



consumer originating outside the trade area. While the existing student housing population is incorporated into the existing trade area expenditures, any future increase in student housing on the site has not been included in this analysis, as any incremental increase has not yet been defined.

The existing primary trade area consists of approximately 4,469 persons in 2,230 households (average household size of 2 persons). The 2,300 households of market demand were added to this trade area to reflect a future potential primary trade area size of 4,530 households. The average household income is \$80,330 (about twice the national average) and the total annual retail spending, excluding motor vehicle and food and beverage (grocery) stores, is \$15,690 per household. The total retail spending potential in the primary trade area is \$72.0 million annually. Potential sales captured on site are estimated to range \$5.34 million and \$7.74 million per year. A detailed estimated retail capture by sub-category for each retail segment is presented in the appendix.

The total on-site spending potential is influenced by many factors affecting capture, including proximity and convenience to the site, distinctive offerings that draw consumers from a greater distance, and specialty versus chain retail among other factors. The retail mix and access to the site can increase demand potential and attract a larger inflow of spending from outside the designated trade areas.

ERA has made a series of assumptions regarding potential retail mix, types of tenants, and quality and price levels for future commercial components at the Brackenridge site. The assumptions incorporate both the likelihood of capturing spending potential on the site as well as the characteristics of Austin's competitive context. The supportable square footage by category has been determined based on relative sales productivity levels (which vary by retail category) as well as the characteristics of the on site and surrounding populations, i.e. number of residents and workers, current and projected household income, and the existence and relative proximity of established retail entities. ERA also assumed a basic land value for the site which would likely preclude the development feasibility of large format retailers such as home improvement centers and large-scale general merchandise stores. This means that, while there may be market demand available for these categories within the primary and secondary trade areas in particular, the underlying land values suggest that a more diverse mix of smaller specialty stores, consumer services, and food and beverage offerings will provide a better response to the market opportunities than would large scale big box stores. ERA's demand analysis has therefore focused on smaller-scaled apparel and accessory stores, specialty children's apparel and toys, gourmet food, wine, and liquor sales, selected consumer services oriented toward resident populations, and a range of dining/food and



beverage options across multiple price levels, (for example, "Impluse purchase" foods and ice cream/gelato, coffee, bake good stores) In addition, five to seven table/service cafes, restaurants, and bars with food would address local dining entertainment demand.

**Table 17: Trade Area Retail Opportunity Gap** 

	Demand Total Market	Supply	Opportunity Gap/Surplus
Store Type	Demand 1/	(Retail Sales) 2/	
Furniture & Home Furnishings Stores	\$17,248,900	\$22,435,000	-\$5,186,100
Electronics & Appliance Stores Building Material & Garden Equipment & Supplies	\$28,869,800	\$21,318,000	\$7,551,800
Dealers	\$18,086,000	\$6,102,000	\$11,984,000
Food & Beverage Stores	\$36,800,300	\$192,402,000	-\$155,601,700
Health & Personal Care Stores	\$16,719,800	\$11,622,000	\$5,097,800
Clothing & Clothing Accessories Stores	\$38,776,500	\$22,164,000	\$16,612,500
Sporting Goods, Hobby, Book, & Music Stores	\$13,856,100	\$26,890,000	-\$13,033,900
General Merchandise Stores	\$36,662,800	\$0	\$36,662,800
Miscellaneous Store Retailers	\$27,192,400	\$26,388,000	\$804,400
Food Services & Drinking Places	\$64,961,400	\$49,004,000	\$15,957,400
Total:	\$299,174,000	\$378,325,000	-\$79,151,000

Notes:

Source: ESRI Business Analyst; InfoUSA; US Census Bureau; Economics Research Associates, 2008.

**Table 18: Primary Trade Area Retail Support** 

	Avg Spending Trade Area		On-Site Market Capture		Potential On-Site Sales	
Spending Category	Per Household	Market Potential	Low	High	Low	High
Furniture & Home Furnishings Stores						
	\$960	\$4,408,100	2.4%	5%	\$103,740	\$207,480
Electronics & Appliance Stores	\$1,746	\$8,015,500	2%	4%	\$147,640	\$291,000
Building Material & Garden Equipment						
& Supplies Dealers	\$982	\$4,508,400	1%	1%	\$28,840	\$38,450
Food & Beverage Stores	\$5,057	\$23,222,700	15%	20%	\$111,340	\$167,000
Health & Personal Care Stores	\$992	\$4,555,800	4%	5%	\$180,210	\$245,030
Clothing & Clothing Accessories Stores						
3	\$2,395	\$10,998,200	6%	9%	\$658,750	\$949,680
Sporting Goods, Hobby, Book, &						
Music Stores	\$792	\$3,635,700	4%	6%	\$135,410	\$218,580
General Merchandise Stores	\$2,114	\$9,708,300	0%	0%	\$0	\$0
Miscellaneous Store Retailers	\$1,667	\$7,653,700	0%	0%	\$0	\$0
Food Services & Drinking Places	\$4,043	\$18,566,000	14%	19%	\$2,611,390	\$3,504,990

Source: ESRI Business Analyst; BLS Consumer Expenditure Survey; Economics Research Associates, 2008.

<sup>1/</sup> Market Demand from primary and secondary trade areas.

<sup>2/</sup> Includes only retailers within the trade areas.



The secondary trade area consists of approximately 15,616 persons in 7,778 households (average household size of 2.01 persons). The average household income in the secondary trade area is \$128,878 and the total annual retail spending, excluding motor vehicle and food and beverage stores, \$24,472 per household. The total retail spending potential of the trade area is \$190 million annually. Total potential sales captured on site are estimated to fall between a total \$1.07 and \$2.36 million per year.

**Table 19: Secondary Trade Area Retail Support** 

			On-	Site		
	Avg Spending	Trade Area	Mai	ket	Potential (	On-Site Sales
Spending Category	Per Household	Market Potential	Low	High	Low	High
	t1 C51	¢42.040.000	00/	40/	¢64.400	¢420.420
Furniture & Home Furnishings Stores	\$1,651	\$12,840,800	0%	1%	\$64,190	\$128,420
Electronics & Appliance Stores	\$2,681	\$20,854,300	0%	0%	\$0	\$0
Building Material & Garden Equipment &						
Supplies Dealers	\$1,746	\$13,577,600	0%	0%	\$6,560	\$13,110
Food & Beverage Stores	\$7,463	\$58,044,300	15%	20%	\$28,010	\$56,030
Health & Personal Care Stores	\$1,564	\$12,164,000	0.2%	0%	\$29,680	\$59,380
Clothing & Clothing Accessories Stores	\$3,571	\$27,778,300	0.5%	1%	\$132,600	\$265,190
Sporting Goods, Hobby, Book, & Music						
Stores	\$1,314	\$10,220,400	0.5%	1%	\$51,100	\$102,210
General Merchandise Stores	\$3,465	\$26,954,500	0%	0%	\$0	\$0
Miscellaneous Store Retailers	\$2,512	\$19,538,700	0%	0%	\$0	\$0
Food Services & Drinking Places	\$5,965	\$46,395,400	1.0%	2.4%	\$446,490	\$1,107,500

Source: ESRI Business Analyst; BLS Consumer Expenditure Survey; Economics Research Associates, 2008.

Inflow, calculated as an additional percentage to captured sales from the primary and secondary trade areas, varies by retail category as detailed in Table 20. Inflow is estimated to provide an additional \$2.36 to \$5.38 million in retail support annually.

Table 20: In-Flow by Retail Category

Store Type	<b>Inflow Factor</b>
Furniture & Home Furnishings Stores	10%
Electronics & Appliance Stores	2%
Building Material & Garden Equipment & Supplies	
Dealers	2%
Food & Beverage Stores	0.5%
Health & Personal Care Stores	0.5%
Clothing & Clothing Accessories Stores	2%
Sporting Goods, Hobby, Book, & Music Stores	2%
General Merchandise Stores	0%
Miscellaneous Store Retailers	0%
Food Services & Drinking Places	2.5%

Source: Economics Research Associates, 2008.



**Table 21: Market Demand Segmentation** 

	Primary T	rade Area	Secondary	Trade Area	Inf	low	To	otal
Spending Category	Low	High	Low	High	Low	High	Low	High
Furniture & Home Furnishings Stores								
rumiture & nome rumishings stores	\$103,740	\$207,480	\$64,190	\$128,420	\$110,160	\$220.340	\$278,090	\$556,240
Electronics & Appliance Stores	\$147,640	\$291,000	\$0	\$0	\$147,640	\$291,000	\$295,280	\$582,000
Building Material & Garden								
Equipment & Supplies Dealers	\$28,840	\$38,450	\$6,560	\$13,110	\$28,970	\$38,710	\$64,370	\$90,270
Health & Personal Care Stores	\$180,210	\$245,030	\$29,680	\$59,380	\$180,360	\$245,320	\$390,250	\$549,730
Clothing & Clothing Accessories								
Stores	\$658,750	\$949,680	\$132,600	\$265,190	\$661,420	\$954,990	\$1,452,770	\$2,169,860
Sporting Goods, Hobby, Book, &								
Music Stores	\$135,410	\$218,580	\$51,100	\$102,210	\$136,440	\$220,630	\$322,950	\$541,420
General Merchandise Stores	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous Store Retailers	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Food Services & Drinking Places	\$2,611,390	\$3,504,990	\$446,490	\$1,107,500	\$2,622,560	\$3,532,670	\$5,680,440	\$8,145,160
Total	\$5,343,250	\$7,739,430	\$1,070,770	\$2,356,180	\$5,375,500	\$7,809,210	\$11,789,520	\$17,904,820

Source: ESRI Business Analyst; BLS Consumer Expenditure Survey; Economics Research Associates, 2008.

Total market support for retail on-site is estimated at \$11.79 to \$17.90 million annually, detailed by category in Table 21. Based on typical required productivity levels in the Austin market, this level of annual spending translates into supportable square footage of 20,790 to 36,690 square feet of retail space across several categories, with a high share allocated to food service and drinking places. The retail demand demonstrates several key considerations for the design and development at the project site. First, there is enough support to develop several restaurants on site that will provide additional amenities to the surrounding neighborhoods. The relatively limited demand in several other categories means the retail space will require smaller floor-plates that will fit well into a neighborhood retail format and mixed-use environment. These retail demand totals will not create demand for a large retail development, shopping center, or power center and will likely provide opportunities for locally operated small businesses.

Table 22: Supportable On-Site Retail Space (Sq Ft)

	Market	Demand	Sup	port	
Store Type	Total Captur	ed Demand 1	New Supportable Sq Ft		
	Low	High	Low	High	
Furniture & Home Furnishings Stores	\$278,090	\$556,240	620	1,390	
Electronics & Appliance Stores	\$295,280	\$582,000	660	1,660	
Building Material & Garden Equipment & Supplies Dealers	\$64,370	\$90,270	180	360	
Health & Personal Care Stores	\$390,250	\$549,730	1,080	2,090	
Clothing & Clothing Accessories Stores	\$1,452,770	\$2,169,860	4,090	7,540	
Sporting Goods, Hobby, Book, & Music Stores	\$322,950	\$541,420	920	2,160	
General Merchandise Stores	\$0	\$0	0	0	
Miscellaneous Store Retailers	\$0	\$0	0	0	
Food Services & Drinking Places	\$5,680,440	\$8,145,160	12,680	20,510	
Total	\$8,734,980	\$13,024,990	20,790	36,690	

Source: ESRI Business Analyst; InfoUSA; US Census Bureau; Economics Research Associates, 2008.



The site location is best suited for neighborhood serving retail functions and support for a department store (measured in the general merchandise and miscellaneous store retailer categories) is not sufficient to attract an anchor. This demand estimation should be considered conservative, and can increase over time. The success of retail will be a function of its planning and execution to which the market will respond. A well programmed retail strategy, with an optimal retail mix and format, can increase the competitive share of the market that the project captures over time.



## V. Hotel Market Analysis

## **Hotel Demand Summary**

ERA evaluated the current and estimated future performance of Austin's existing lodging market in order to determine market demand, positioning, and potential success in developing a hotel on the Brackenridge site. ERA analyzed the needs of the local market in order to determine if a hotel property at this site could be supported at present time, or in the future.

As a result of this analysis, there is not sufficient demand to necessitate a property at the site in the near future. However, within 8-10 years, the market is likely to offer sufficient demand to support a hotel property. A 100-150-room mid-scale property, with onsite amenities is best suited to provide adequate levels of occupancy and amenities to work as a vibrant component to the Brackenridge development. This would allow the Brackenridge property to capitalize on business being priced out of the Austin Central Business District (CBD) and serve as a valuable service to businesses and residents in the immediate surrounding area. This hotel could be included in future planning options on the site, after year 10 in the development program and included as part of larger development components in later stages.

### **Hotel Market**

Room night demand for the proposed hotel was calculated as a function of the CBD's share of Austin room nights, which are estimated at almost 11 million in 2008 and are expected to increase to 13 million by 2017. The CBD's share of room nights was estimated based on room supply and occupancy rates. Room night demand, existing supply levels, and planned additions to the hotel market indicate that the market is well supplied in to the near future.

Currently, the Austin market offers a wide variety of lodging options in a wide variety of price points, service styles, and locations. The number of high-end rooms is large (almost 50 percent of the market) and expected to grow with several new additions. Economy rooms are predominantly represented in outlying areas of the MSA. However, historically, hotels in Austin's Central Business District (CBD) outperform hotels in the Austin-Red Rocks MSA in terms of occupancy and average daily rate (ADR). With tourism to Austin, the market's ADR, and occupancy increasing, travelers seeking mid- and low-priced options will be driven out of the CBD to seek low and mid-priced accommodations. Therefore, a property, proximate to, but outside the CBD would serve a valuable role in accommodating these travelers.



The primary opportunity for a Brackenridge property will be to accommodate demand that is being priced out of the CBD, or can not be accommodated on certain peaks in activity. In order to attract guests, the property will need to offer a number of amenities, such as onsite or nearby food and beverage outlets.

### Visitation

Visitation to the Austin market is strong and growing. According to most recent available data, Austin-Round Rock MSA receives approximately 19 million visitors, an increase of two million visitors since 2003. Tourism is predominantly leisure travel, which accounts for 64 percent of travel persondays to the region. Of this 64 percent, vacation travel accounted for 13 percent of person days and non-vacation 51 percent. Visiting friends and relatives was the most commonly cited reason for visiting Austin, accounting for 30 percent of person-days.

Business travel produced 36 percent of person-days to the Austin-Round Rock MSA; 19 percent was related to group meetings and 17 percent was transient business.

The patterns of visitation to Austin indicate a strong drive-to orientation, with 72 percent of travelers arriving by automobile; 64 percent of person-days were generated by travelers from 250 miles or less (one-way).

The average party size (adults and children) was 2.1 people, with an average age of 44 years, and an average household income of \$72,740.

# **Hotel Supply**

There are currently 26,000 hotel rooms in the Austin market, with 5,000 of these located in Austin's Central Business District (CBD). As seen below in Table 23, as classified based on service levels provided by Smith Travel Research, a leading hospitality industry database, almost half (48 percent) of these are high end properties, 32 percent are mid-level, and 20 percent are economy brands.



Table 23: Current Hotel Supply, 25-mile radius of site

	Percent of
	Market
High End	48%
Mid-Level	32%
Economy	20%
Total	100%

Source: Smith Travel Research, Economics

Research Associates. 2008.

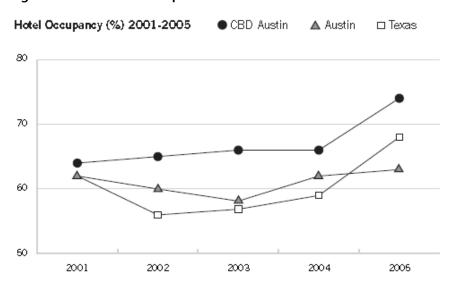
In addition the existing market, a number of hotel properties are under construction or planned for the Austin market, as follows:

- The Block 21/W Hotel is currently under construction as part of a \$225 million project in the 2nd Street district. In addition to the hotel's planned 252 guestrooms, this will include luxury condominiums, a new Austin Children's Museum, a nightclub, and recording studios.
- A 300-room Westin Hotel is planned in Austin's Warehouse District. The planned development also includes 15,000 square-feet of meeting space, restaurant, outdoor pool deck, and spa.
- The upscale 21C Museum Hotel has been announced, which will include hotel rooms, luxury condominiums, a high-end art collection, an upscale restaurant, and artists' lofts.
- Marriott Hotels is planning to begin construction in late 2008 on a 1,000-room property to serve as a headquarter hotel for the Austin Convention Center. This convention hotel will also include 50,000 square feet of meeting space and two large ballrooms.
- The 340-room Westin at The Domain is scheduled to begin construction in September 2008 as part of the massive Domain retail project. The project will also include 14,000 square feet of meeting space, retail shopping, and some residential units.
- A redevelopment of Austin's Seaholm Power Plant into retail, restaurant, office and meeting space has been announced. This will include the 160-room Seaholm Plaza Hotel, an upscale hotel with two restaurants, bar, pavilion and meeting space, and will be connected to the Austin Convention Center by trolley service.
- The 14-room boutique hotel, Hotel St. Cecilia is currently under just off South Congress Avenue. This renovation of an older hotel will offer private bungalows, pool, and modern lounge.



### **Current Market Performance**

As seen below and Table 25, the CBD performs favorably in comparison to the overall Austin area, and has for some time. The Austin market performs favorably compared to the Texas market overall. Over the last five years, the CBD has experienced an average occupancy of approximately 71 percent, with Austin overall averaging approximately 67 percent, and Texas at approximately 66 percent. The ADR over this same time period in the CBD has been \$137, while Austin's ADR is around \$104, and that of Texas overall is \$93. As the CBD market continues to mature and develop, price pressures will likely present opportunities to develop price competitive properties that will serve both business and leisure travelers in a proximate downtown location.



**Figure 5: Area Hotel Occupancies** 

## **Unmet Demand**

ERA evaluated supportable room inventory to test whether the current and near term estimated demand would support the existing and planned Austin market, and if the market would generate unmet demand. In this evaluation of demand, existing supply, current market performance, and projected performance are taken into account.

ERA's demand estimates are based on recent and anticipated future growth trends in visitation to Austin and continuation of the market's occupancy, average lengths-of-stay, and market share characteristics. More specifically, these factors are:

Overnight tourism will increase at a rate of two percent annually over the next several years.



- 44.3 percent of visitors to the Austin MSA stay in a hotel.
- CBD hotels represent 21.2 percent of total hotel rooms in the Austin market.
- Market supply is expected to increase by 1,817 rooms by approximately 2012.
- After that, supply is estimated to increase at a rate of 1.25 percent annually, or approximately one 150-room hotel every two years.
- Based on historical occupancies, occupancy is estimated at 72 percent, increasing to approximately 75 percent by 2017.

Room night demand in Austin is calculated as a function of visitation, which based on historical patterns, is anticipated to increase at an average rate of two percent for the next several years. ERA estimates the Austin visitor market will increase from 19.5 million annual visitors in 2008 to 23.3 million visitors by 2017. Utilizing current average party size and average lengths of stay, the market's room night total is anticipated to increase from 10.9 million to 13.1 million during this same time frame. Therefore, demand in the CBD is estimated to increase from 6,353 annual room nights to 8,304 room nights. At the suggested sustainable market occupancy level, and planned additions to the regional market, this quantity of demand suggests that the market as a whole is well supplied to accommodate demand growth over the next several years.

Given these conditions and existing market performance of the Central Business District, ERA believes that within 8-10 years, their may be sufficient demand to support a 100-150 room, midscale hotel. Over the longer-term, there could be additional demand for hotel rooms beyond the timeframe that current modeling can project.



**Table 24: Supportable Demand** 

<b>Local Unaccommodated Demand</b>	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austin annual visitation	19,500,000	19,890,000	20,287,800	20,693,556	21,107,427	21,529,576	21,960,167	22,399,371	22,847,358	23,304,305
Austin hotel stays	10,962,668	11,181,921	11,405,560	11,633,671	11,866,344	12,103,671	12,345,745	12,592,659	12,844,513	13,101,403
Austin, CBD market share	21.2%	21.4%	21.6%	21.8%	22.0%	22.2%	22.5%	22.7%	22.9%	23.1%
Austin, CBD hotel stays	2,319,026	2,389,060	2,461,210	2,535,539	2,612,112	2,690,998	2,772,266	2,855,988	2,942,239	3,031,095
Days in a year	365	365	365	365	365	365	365	365	365	365
Total Roomnight demand	6,353	6,545	6,743	6,947	7,156	7,373	7,595	7,825	8,061	8,304
Existing and planned room supply	5,500	5,500	6,052	7,143	7,317	7,408	7,501	7,595	7,690	7,786
Total unaccommodated demand	853	1,045	691	-196	-161	-36	94	230	371	518
Total Demand Potential										
Projected occupancy	72.0%	72.3%	72.6%	72.9%	73.2%	73.5%	73.7%	74.0%	74.3%	74.6%
Total Room Demand	239	290	190	0	0	0	25	60	95	132

Source: Economics Research Associates, September 2008.



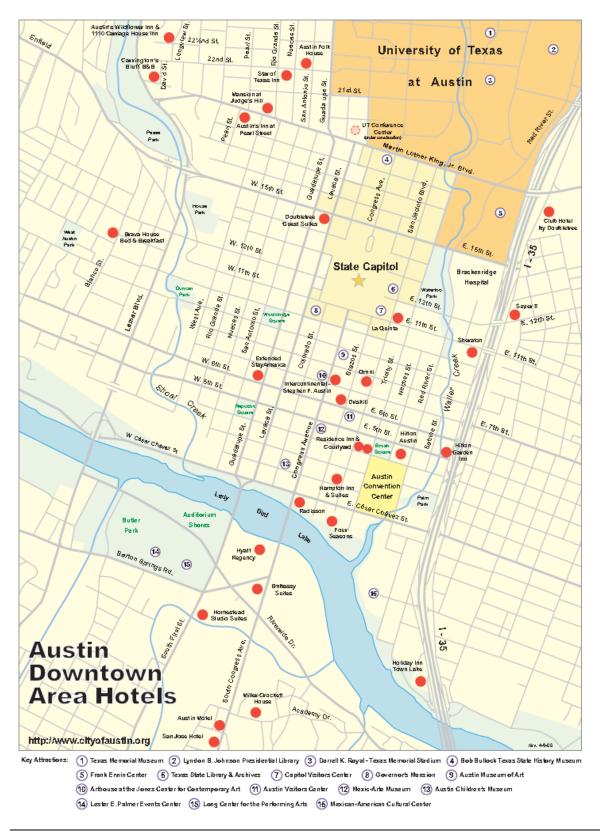
Table 25: Hotel Performance, 2001-2007

		Texas	Austin	СВ	D Austin
2001	Occupancy	62.7%	62.8%		64.6%
	Avg. Daily Rate	\$ 85.79	\$ 92.31	\$	125.85
	RevPAR	\$ 53.83	\$ 58.00	\$	81.26
2002	Occupancy	61.0%	58.4%		65.2%
	Avg. Daily Rate	\$ 84.18	\$ 89.11	\$	117.19
	RevPAR	\$ 51.37	\$ 52.07	\$	76.38
2003	Occupancy	60.1%	59.1%		66.6%
	Avg. Daily Rate	\$ 83.14	\$ 89.81	\$	121.36
	RevPAR	\$ 49.99	\$ 53.07	\$	80.80
2004	Occupancy	62.7%	60.5%		66.7%
	Avg. Daily Rate	\$ 85.19	\$ 88.17	\$	117.79
	RevPAR	\$ 53.44	\$ 53.36	\$	78.53
2005	Occupancy	67.6%	68.9%		71.8%
	Avg. Daily Rate	\$ 89.95	\$ 98.03	\$	127.97
	RevPAR	\$ 60.78	\$ 67.57	\$	91.90
2006	Occupancy	69.3%	74.1%		75.2%
	Avg. Daily Rate	\$ 99.48	\$ 113.69	\$	149.55
	RevPAR	\$ 68.94	\$ 84.21	\$	112.43
2007	Occupancy	67.6%	73.3%		75.3%
	Avg. Daily Rate	\$ 105.87	\$ 125.70	\$	167.74
	RevPAR	\$ 71.60	\$ 92.10	\$	126.26
Average	Occupancy	64.4%	65.3%		69.3%
	Avg. Daily Rate	\$ 90.51	\$ 99.55	\$	132.49
	RevPAR	\$ 58.56	\$ 65.77	\$	92.51
Change	Occupancy	7.5%	14.2%		8.7%
	Avg. Daily Rate	\$ 22.73	\$ 35.89	\$	46.38
	RevPAR	\$ 21.61	\$ 39.03	\$	45.46

Source: PKF Consulting, Economics Research Associates, 2008.



**Figure 6: Austin CBD Hotels** 





# **VI.** Appendix



Table 266: Historical Average Occupancy, Central Market Area

Мар											
No.	Project Name	No. Units	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05	Dec-06	Dec-07	May-08
1	300 N Lamar	148									74.3%
2	404 Rio Grande	140				6.4%	93.6%	95.0%	98.6%	97.9%	92.9%
3	6th Street West	128				97.7%	97.7%	97.7%	100.0%	98.4%	96.9%
4	900 W. 23rd Street	52				100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
5	AMLI Downtown	221					60.2%	97.7%	97.7%	98.2%	82.4%
6	AMLI on Second	231									61.9%
7	Brown Building	90	100.0%	78.6%	87.5%	68.4%					
8	Brownstone Park	141	100.0%	100.0%	90.8%	94.3%	95.0%	100.0%	100.0%	100.0%	100.0%
9	Buckingham Square	140	100.0%	100.0%	97.4%	85.5%					
10	Bull Creek Townhomes	140		99.3%	95.7%	96.4%	95.7%	95.7%	99.3%		
11	Century Square	139	98.6%	93.6%	95.0%	97.8%	90.4%	99.3%	100.0%	100.0%	100.0%
12	Cornerstone Place	31	100.0%	100.0%	100.0%	100.0%	93.9%	0.0%	100.0%	100.0%	100.0%
13	Duval Villa	111	98.2%	100.0%	95.5%	100.0%	100.0%	100.0%	100.0%	98.2%	91.5%
14	Fountain Terrace	68	100.0%	100.0%	98.5%	98.5%	100.0%	98.5%	100.0%	97.1%	98.5%
15	French Quarters	104	100.0%	99.0%	97.1%	93.3%	85.6%	98.1%	100.0%	99.0%	94.8%
16	Gables Central Park	273	99.6%	98.2%	95.6%	95.6%	97.1%	88.3%	96.7%	97.1%	97.1%
17	Gables Town Lake	256	100.0%	92.3%	97.7%	97.3%	99.6%	93.4%	92.9%	95.9%	95.5%
18	Gables West Avenue**	239	97.5%	95.8%	95.8%	94.5%	95.8%	96.7%	97.1%	92.9%	88.7%
19	Hidden Garden Apartments	70	95.7%	95.7%	92.9%	97.1%	81.4%	87.1%	100.0%	100.0%	100.0%
20	Hyde Park	54	98.1%	100.0%	92.6%	96.3%	85.2%	88.9%	100.0%	100.0%	98.1%
21	Jefferson West **	76					03.2 /0		98.7%	98.7%	100.0%
22	Kensington Green	318	 97.2%	93.8%	91.2%	90.9%	79.9%	96.9%	100.0%	99.7%	98.3%
23	Le Med	64	100.0%	95.8%	95.3%	96.9%	79.9% 84.4%	96.9%	100.0%	96.9%	96.9%
24		24	100.0%	95.5% 87.5%	100.0%	95.8%	100.0%	54.2%	91.7%	95.8%	79.2%
	Littlefield Quarters										
25	North Loop	130	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
26	Oak Creek	92	97.8%	100.0%	87.0%	84.8%	90.2%	100.0%	100.0%	98.9%	96.7%
27	Oak Park	195	99.5%	98.5%	89.7%	91.8%	97.9%	94.4%	100.0%	100.0%	98.5%
28	Orleans Apartments**	48		•••		85.4%	89.6%	91.7%	91.7%	97.9%	100.0%
29	Park Place**	24					100.0%	100.0%	100.0%	100.0%	100.0%
30	Pecan Grove	182	97.8%	100.0%	92.9%	85.2%	95.6%	97.3%	98.9%	98.9%	99.5%
31	Quarters Cameron House	64						•••	75.0%	100.0%	89.1%
32	Quarters Montgomery House	88		•••				•••	77.3%	100.0%	93.2%
33	Quarters Sterling House	100							98.0%	100.0%	94.0%
34	Red River Flats	32									13.3%
35	River Oaks	66	100.0%	100.0%	100.0%	100.0%	100.0%	0.9%	100.0%	72.7%	98.5%
36	San Gabriel Square	114	99.1%	91.2%	92.2%	93.8%	95.5%	92.9%	95.6%	97.4%	65.8%
37	Tanglewood North	128	100.0%	98.4%	97.7%	100.0%	96.1%	100.0%	94.5%	100.0%	98.4%
38	Tanglewood West	85	98.8%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%
39	Texan Shoal Creek	78								100.0%	89.3%
40	Texan Tower	35							100.0%	100.0%	90.5%
41	The Block on 28th	101								100.0%	91.1%
42	The Block on Leon	133								100.0%	85.7%
43	The Block on Pearl	96								100.0%	96.9%
44	The Elm	100	100.0%	95.0%	97.0%	93.0%	97.0%	96.0%	98.0%	100.0%	100.0%
45	The Monarch	164								100.0%	34.1%
46	The Texan	62						100.0%	100.0%	94.3%	95.0%
47	The Triangle Lofts	77									19.5%
48	The Triangle Ph I	335						68.4%	87.2%	93.9%	82.1%
49	The Triangle Ph II	115							61.7%	100.0%	77.4%
50	The Tuscany	31	100.0%	100.0%	96.8%	100.0%	96.8%	93.5%	100.0%	100.0%	96.8%
51	Towers of Town Lake	13	100.0%	92.0%	100.0%	76.9%	69.2%				
52	Villas on Guadalupe	150					100.0%	94.0%	97.3%	100.0%	100.0%
53	Warwick	56	89.3%	100.0%	96.4%	85.7%	98.2%	98.2%	98.2%	100.0%	100.0%
54	Waterford Condominiums	35					100.0%	100.0%	100.0%	100.0%	100.0%
	all Total/Average	5,802	99.1%	96.7%	95.4%	92.1%	92.7%	94.2%	96.0%	97.1%	88.7%

Notes: El Presidente combined with Kensington Green in in 2002; Buckingham Square removed from database in June 2004; Rio Nueces removed in 2005; Villa Vallarta removed in 2006; Bull Creek removed from database in 2007; Brown Building removed from database in 2003; Towers of Town Lake removed in 2005

Source: Capitol Market Research, Austin Area Apartment Survey, December 1997 - June 2008

<sup>\*\*</sup>Jefferson West formerly Sterling West; Park Place formerly Boardwalk on 24th, Orleans Apartments formerly Villa Orleans, Gables West Ave formerly Post West Ave.



Table 277: Historical Average Rent per SF, Central Market Area

Map No.	Project Name	YOC	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05	Dec-06	Dec-07	May-08
1	300 N Lamar	2008				Dec-03	Dec-04	Dec-03			\$2.07
2	404 Rio Grande	2004				\$1.54	\$1.65	\$1.38	\$1.90	\$1.95	\$1.86
3	6th Street West	1970				\$1.05	\$1.05	\$1.05	\$1.06	\$1.29	\$1.37
4	900 W. 23rd Street	2003				\$1.80	\$1.77	\$1.77	\$1.77	\$1.77	\$1.78
5	AMLI Downtown	2004					\$1.82	\$1.90	\$2.04	\$2.21	\$2.00
6	AMLI on Second	2008									\$2.26
7	Brown Building	1998	\$1.62	\$1.63	\$1.63	\$1.43					42.20
8	Brownstone Park	1968	\$0.87	\$0.94	\$0.94	\$0.88	\$0.89	\$0.92	\$0.95	\$0.95	\$1.00
9	Buckingham Square	1972	\$1.07	\$1.07	\$1.07	\$0.94					
10	Bull Creek Townhomes	1968	\$0.91	\$0.96	\$0.88	\$0.88	\$0.96	\$0.96	\$0.96		
11	Century Square	1971	\$1.12	\$1.16	\$1.01	\$1.03	\$1.11	\$1.19	\$1.13	\$1.18	\$1.19
12	Cornerstone Place	1979	\$1.40	\$1.40	\$1.40	\$1.29	\$1.61	\$1.53	\$1.78	\$1.83	\$1.83
13	Duval Villa	1968	\$1.12	\$1.16	\$1.11	\$1.10	\$1.09	\$0.84	\$1.14	\$1.27	\$1.14
14	Fountain Terrace	1966	\$1.19	\$1.19	\$1.19	\$1.13	\$1.13	\$1.13	\$1.13	\$1.24	\$1.33
15	French Quarters	1964	\$0.87	\$0.87	\$0.89	\$0.87	\$0.83	\$0.91	\$0.93	\$1.09	\$1.02
16	Gables Central Park	1997	\$1.36	\$1.39	\$1.36	\$1.29	\$1.37	\$1.20	\$1.40	\$1.50	\$1.55
17	Gables Town Lake	1996	\$1.42	\$1.43	\$1.46	\$1.26	\$1.40	\$1.36	\$1.52	\$1.64	\$1.57
18	Gables West Avenue**	2001	\$1.55	\$1.57	\$1.72	\$1.52	\$1.48	\$1.47	\$1.94	\$2.05	\$2.04
19	Hidden Garden Apartments	1972	\$0.94	\$1.02	\$0.85	\$0.82	\$0.70	\$0.71	\$0.71	\$0.77	\$0.77
20	Hyde Park	1965	\$1.07	\$1.24	\$1.14	\$1.06	\$1.02	\$1.06	\$1.14	\$1.16	\$1.16
21	Jefferson West **	2006							\$1.75	\$2.26	\$2.27
22	Kensington Green	1973	\$0.94	\$0.83	\$0.80	\$0.81	\$0.80	\$0.82	\$0.89	\$0.92	\$0.98
23	Le Med	1973	\$1.13	\$1.13	\$1.13	\$0.96	\$0.88	\$0.99	\$1.13	\$1.20	\$1.25
24	Littlefield Quarters	1979	\$1.26	\$1.13	\$1.21	\$1.13	\$0.70	\$1.25	\$1.26	\$1.26	\$1.62
25	North Loop	1979	\$0.75	\$0.75	\$0.57	\$0.56	\$0.57	\$0.98	\$0.98	\$0.98	\$0.87
26	Oak Creek	1972	\$0.81	\$0.90	\$0.80	\$0.80	\$0.77	\$0.80	\$0.91	\$0.92	\$0.98
27	Oak Park	1973	\$0.90	\$1.04	\$1.05	\$1.02	\$0.96	\$0.95	\$1.12	\$1.12	\$1.15
28	Orleans Apartments**	1965				\$1.06	\$1.10	\$1.03	\$1.06	\$1.08	
29	Park Place**	2003					\$1.83	\$2.02	\$1.83	\$1.86	\$1.86
30	Pecan Grove	1984	\$1.05	\$1.02	\$1.04	\$0.91	\$0.96	\$0.97	\$1.00	\$1.26	\$1.24
31	Quarters Cameron House	2006							\$1.94	\$2.13	\$2.24
32	Quarters Montgomery House	2006							\$1.93	\$1.95	\$2.23
33	Quarters Sterling House	2006							\$1.97	\$2.14	\$2.23
34	Red River Flats	2008									\$1.80
35	River Oaks	1962	\$0.98	\$1.00	\$0.97	\$0.99	\$0.89	\$0.97	\$1.00	\$1.51	\$1.32
36	San Gabriel Square	1969	\$1.27	\$1.31	\$1.24	\$1.31	\$1.31	\$1.35	\$1.36	\$1.43	\$1.43
37	Tanglewood North	1964	\$1.01	\$1.06	\$1.11	\$1.05	\$1.04	\$1.10	\$0.99	\$1.13	\$1.21
38	Tanglewood West	1967	\$0.98	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06	\$1.06
39	Texan Shoal Creek	2007					• • • • • • • • • • • • • • • • • • • •			\$1.85	\$1.68
40	Texan Tower	2006					• • • • • • • • • • • • • • • • • • • •		\$1.80	\$1.74	\$1.79
41	The Block on 28th	2007					• • • • • • • • • • • • • • • • • • • •			\$1.97	\$2.06
42	The Block on Leon	2007					• • • •			\$2.06	\$2.03
43	The Block on Pearl	2007								\$2.06	\$2.07
44	The Elm	1974	\$0.88	\$0.91	\$1.08	\$0.86	\$0.79	\$0.81	\$0.85	\$0.87	\$0.94
45	The Monarch	2008					•••				\$2.18
46	The Texan	2005					• • • • • • • • • • • • • • • • • • • •	\$2.03	\$1.73	\$1.82	\$1.89
47	The Triangle Lofts	2008					• • • •				\$1.64
48	The Triangle Ph I	2005					• • •	\$1.43	\$1.33	\$1.52	\$1.63
49	The Triangle Ph II	2006	 ¢1 13		 ¢1.00	 ¢1.00	 ¢0.01	 ¢1 13	\$1.47	\$1.53	\$1.68
50	The Tuscany	1986	\$1.12	\$1.08	\$1.08	\$1.06	\$0.91	\$1.12	\$1.14	\$1.21	\$1.22
51	Towers of Town Lake	1983	\$1.20	\$1.20	\$1.11	\$1.07	\$1.07	 ¢1.02	 ¢4 02	 ¢2.05	 ¢1 00
52	Villas on Guadalupe	2003	 ¢0.01		 ¢1.02	\$1.69	\$1.93	\$1.92	\$1.82	\$2.05	\$1.80
53	Warwick Waterford Condominiums	1971	\$0.91	\$0.87	\$1.03	\$1.03	\$0.91	\$1.00	\$1.16	\$1.15	\$1.15
54		1981					\$1.41	\$1.45	\$1.48	\$1.55	\$1.50

Source: Capitol Market Research, Austin Area Apartment Survey, December 1997 - June 2008
Notes: El Presidente combined with Kensington Green in in 2002; Buckingham Square removed from database in June 2004; Rio Nueces removed in 2005; Villa Vallarta removed in 2006; Bull Creek removed from database in 2007; Brown Building removed from database in

<sup>2003;</sup> Towers of Town Lake removed in 2005
\*\*Jefferson West formerly Sterling West; Park Place formerly Boardwalk on 24th, Orleans Apartments formerly Villa Orleans, Gables West Ave formerly Post West Ave.



**Table 28: Travis County CoStar Detail** 

Building Class	Number of Buildings	Total RBA 1/	Share of Submarket RBA	Vacancy Rate 2/	Average Rental Rate
A	170	23,174,014	35.1%	15.7%	\$30.77/fs
В	1,035	32,183,940	48.8%	10.6%	\$22.80/fs
C	1,191	10,607,668	16.1%	5.7%	\$18.51/fs
County Total	2,396	65,965,622	100.0%	11.6%	\$25.90/fs

Direct Net Absorption	2003	2004	2005	2006	2007	2008	Avg. Annual 06 07
A	n/a	n/a	354,981	1,495,016	255,007	47,030	875,012
В	n/a	n/a	181,788	1,210,834	413,100	779,982	811,967
С	n/a	n/a	64,511	123,393	57,582	42,186	90,488
County Total	(1,410,626)	1,396,370	1,283,062	2,829,243	725,689	869,198	1,777,466

End of Year Direct Vacancy Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 05 07
A	n/a	n/a	15.5%	9.4%	12.9%	15.7%	13.4%
В	n/a	n/a	12.6%	10.3%	11.2%	10.6%	11.2%
A	n/a	n/a	7.8%	6.7%	6.1%	5.7%	6.6%
County Total	15.7%	14.0%	12.8%	9.4%	11.0%	11.6%	11.2%

Average End of Year FS Rental Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 05- 07
A	n/a	n/a	\$22.70	\$26.80	\$30.30	\$30.70	\$27.63
В	n/a	n/a	\$18.00	\$19.80	\$22.60	\$22.80	\$20.80
C	n/a	n/a	\$16.40	\$15.80	\$17.60	\$18.50	\$17.08
County Total	\$18.55	\$19.00	\$20.11	\$22.46	\$25.47	\$25.90	\$23.49

<sup>1/</sup> Rentable Building Area
2/ Vacancy Does Not Include Space Available for Sublet
CoStar data presented only for full year and not available by class for all years
Source: CoStar; Economics Research Associates, 2008.



**Table 29: Austin City CoStar Detail** 

Building Class	Number of Buildings	Total RBA 1/	Share of Submarket RBA	Vacancy Rate 2/	Average Rental Rate
A	178	24,192,856	35.8%	15.7%	\$30.72/fs
В	1,036	32,688,600	48.4%	11.4%	\$22.94/fs
С	1,201	10,720,236	15.9%	5.7%	\$18.47/fs
City Total	2,415	67,601,692	100.0%	12.0%	\$25.81/fs

Direct Net Absorption	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 07
A	n/a	n/a	365,845	1,496,603	226,779	22,182	696,409
В	n/a	n/a	218,015	1,322,272	544,752	725,793	695,013
C	n/a	n/a	74,380	121,823	46,263	58,554	80,822
City Total	(1,589,698)	1,363,156	1,422,853	2,940,698	817,794	806,529	990,961

End of Year Direct Vacancy Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 07
A	n/a	n/a	15.1%	9.2%	12.7%	15.7%	12.3%
В	n/a	n/a	12.9%	10.3%	11.0%	11.4%	11.4%
В	n/a	n/a	7.8%	6.7%	6.3%	5.7%	6.9%
City Total	15.8%	14.2%	12.8%	9.3%	10.8%	12.0%	12.6%

Average End of Year FS Rental Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 07
A	n/a	n/a	\$22.60	\$26.80	\$30.30	\$30.70	\$26.57
В	n/a	n/a	\$17.90	\$19.70	\$22.90	\$22.90	\$20.17
С	n/a	n/a	\$16.40	\$15.80	\$17.70	\$18.40	\$16.63
City Total	\$18.54	\$18.95	\$20.01	\$22.39	\$25.45	\$25.81	\$21.07

<sup>1/</sup> Rentable Building Area 2/ Vacancy Does Not Include Space Available for Sublet

CoStar data presented only for full year and not available by class for all years

Source: CoStar; Economics Research Associates, 2008.



**Table 30: West Central Submarket CoStar Detail** 

Building Class	Number of Buildings	Total RBA 1/	Share of Submarket RBA	Vacancy Rate 2/	Average Rental Rate
A	1	125,000	6.2%	0.0%	-
В	60	1,183,760	58.7%	1.6%	\$28.97/fs
C	136	708,661	35.1%	2.8%	\$25.81/fs
County Total	197	2,017,421	100.0%	1.9%	\$25.90/fs

Direct Net Absorption	2003	2004	2005	2006	2007	2008	Avg. Annual 06 07
A	n/a	n/a	0	0	0	0	0
В	n/a	n/a	20,279	238,447	18,542	10,608	128,495
C	n/a	n/a	204	(22,556)	46,885	8,409	12,165
County Total	(10,343)	(27,429)	11,178	215,891	65,427	19,017	140,659

End of Year Direct Vacancy Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 05 07
A	n/a	n/a	0.0%	0.0%	0.0%	0.0%	0.0%
В	n/a	n/a	6.1%	4.1%	2.5%	1.6%	3.6%
A	n/a	n/a	7.4%	10.6%	4.0%	2.8%	6.2%
County Total	15.7%	14.0%	12.8%	9.4%	11.0%	11.6%	11.2%

Average End of Year FS Rental Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 05- 07
A	n/a	n/a	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
В	n/a	n/a	\$22.50	\$25.30	\$27.60	\$28.90	\$26.08
C	n/a	n/a	\$21.70	\$22.60	\$23.40	\$25.80	\$23.38
County Total	\$21.22	\$21.70	\$22.19	\$23.90	\$24.96	\$26.84	\$24.47

Source: CoStar; Economics Research Associates, 2008.

<sup>1/</sup> Rentable Building Area 2/ Vacancy Does Not Include Space Available for Sublet

CoStar data presented only for full year and not available by class for all years



**Table 281: CBD Submarket CoStar Detail** 

Building Class	Number of Buildings	Total RBA 1/	Share of Submarket RBA	Vacancy Rate 2/	Average Rental Rate
A	20	6,112,531	45.9%	12.7%	\$38.23/fs
В	146	4,716,546	35.4%	8.4%	\$25.34/fs
С	271	2,480,991	18.6%	4.2%	\$15.74/fs
County Total	437	13,310,068	100.0%	9.6%	\$25.90/fs

Direct Net Absorption	2003	2004	2005	2006	2007	2008	Avg. Annual 06 07
A	n/a	n/a	(55,032)	601,848	4,375	204,934	303,112
В	n/a	n/a	9,749	51,111	(19,664)	112,707	15,724
С	n/a	n/a	62,440	72,224	(17,620)	12,835	27,302
County Total	43,225	184,865	177,054	725,183	(32,909)	330,476	346,137

End of Year Direct Vacancy Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 05 07
A	n/a	n/a	25.9%	16.1%	16.0%	12.7%	17.7%
В	n/a	n/a	9.4%	8.3%	9.2%	8.4%	8.8%
A	n/a	n/a	6.9%	4.0%	4.7%	4.2%	5.0%
County Total	15.7%	14.0%	12.8%	9.4%	11.0%	11.6%	11.2%

Average End of Year FS Rental Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 05 07
A	n/a	n/a	\$24.30	\$26.60	\$33.10	\$38.20	\$30.55
В	n/a	n/a	\$19.20	\$20.50	\$23.50	\$25.30	\$22.13
C	n/a	n/a	\$16.50	\$14.50	\$16.50	\$15.70	\$15.80
County Total	\$21.22	\$21.76	\$22.59	\$24.07	\$28.86	\$31.99	\$26.88

<sup>1/</sup> Rentable Building Area

CoStar data presented only for full year and not available by class for all years Source: CoStar; Economics Research Associates, 2008.

<sup>2/</sup> Vacancy Does Not Include Space Available for Sublet



**Table 292: Central Submarket CoStar Detail** 

Building Class	Number of Buildings	Total RBA 1/	Share of Submarket RBA	Vacancy Rate 2/	Average Rental Rate
A	2	293,282	6.2%	28.0%	\$30.80/fs
В	88	2,621,232	55.1%	6.8%	\$20.15/fs
С	215	1,845,561	38.8%	7.1%	\$20.79/fs
City Total	305	4,760,075	100.0%	8.3%	\$25.81/fs

Direct Net Absorption	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 07
A	n/a	n/a	(611)	55,295	(2,720)	(25,788)	17,321
В	n/a	n/a	1,922	56,189	82,159	61,509	46,757
С	n/a	n/a	17,180	(6,531)	23,011	11,639	11,220
City Total	(156,019)	120,165	161,950	104,953	102,450	47,360	66,700

End of Year Direct Vacancy Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 07
A	n/a	n/a	37.1%	18.3%	19.2%	28.0%	24.9%
В	n/a	n/a	14.2%	12.1%	9.2%	6.8%	11.8%
<u>B</u>	n/a	n/a	8.7%	9.0%	7.8%	7.1%	8.5%
City Total	18.1%	16.8%	13.5%	11.3%	9.3%	8.3%	13.8%

Average End of Year FS Rental Rate	2003	2004	2005	2006	2007	2008	Avg. Annual 03 - 07
A	n/a	n/a	\$21.10	\$23.80	\$30.20	\$30.80	\$25.03
В	n/a	n/a	\$18.30	\$18.30	\$20.00	\$20.10	\$18.87
С	n/a	n/a	\$16.80	\$16.60	\$20.20	\$20.70	\$17.87
City Total	\$16.79	\$17.54	\$18.38	\$18.32	\$21.14	\$22.33	\$18.43

Source: CoStar; Economics Research Associates, 2008.

<sup>1/</sup> Rentable Building Area 2/ Vacancy Does Not Include Space Available for Sublet

CoStar data presented only for full year and not available by class for all years



**Table 303: Primary Trade Area Retail Demand Calculations** 

Primary Trade Area	
Population	4,469
Households	2,292
Plus Development Program HHs	2,300
Total Households	4,592
Avg HH Income	\$80,339

On-Site Market							
	Avg Spending	Trade Area	Cap	ture	Potential O	n-Site Sales	
Spending Category	Per Household	Market Potential	Low	High	Low	High	
Furniture & Home Furnishings Stores							
	\$960	\$4,408,100	2.4%	5%	\$103,740	\$207,480	
Furniture	\$612	\$2,809,400	2.5%	5%	\$70,240	\$140,470	
Floor Coverings	\$64	\$291,900	2.5%	5%	\$7,300	\$14,600	
Housewares	\$85	\$390,100	2.5%	5%	\$9,750	\$19,510	
Luggage	\$11	\$51,800	1%	2%	\$520	\$1,040	
Telephones and Accessories	\$40	\$182,000	5%	10%	\$9,100	\$18,200	
Household Textiles	\$149	\$682,900	1%	2%	\$6,830	\$13,660	
Electronics & Appliance Stores	\$1,746	\$8,015,500	2%	4%	\$147,640	\$291,000	
Major Appliances	\$239	\$1,097,600	0%	0%	\$0	\$0	
Small Appliances	\$37	\$171,100	5%	7.5%	\$8,560	\$12,830	
TV/Video/Sound Equipment	\$1,212	\$5,563,300	2.5%	5%	\$139,080	\$278,170	
Computers/Software/Accessories	. ,				. ,	. ,	
for Home Use	\$258	\$1,183,500	0%	0%	\$0	\$0	
Building Material & Garden Equipmen	t						
& Supplies Dealers	\$982	\$4,508,400	1%	1%	\$28,840	\$38,450	
Maintenance and Remodeling	*	+ -//			+/-·-	,·	
Materials	\$237	\$1,089,600	0%	0%	\$0	\$0	
Lawn and Garden	\$84	\$384,500	7.5%	10%	\$28,840	\$38,450	
	\$661	\$3,034,300	0%	0%	\$0	\$0,430	
Housekeeping Supplies	\$001	\$3,034,300	0 70	0 /0	30	<b>3</b> 0	
Food & Beverage Stores	\$5,057	\$23,222,700	15%	20%	\$111,340	\$167,000	
Food at Home	\$4,075	\$18,712,700	0%	0%	\$0	\$0	
Alcoholic Beverages	\$485	\$2,226,700	5%	7.5%	\$111,340	\$167,000	
Nonalcoholic Beverages at Home	ų .os	42,220,700	5,0	7.570	ψ,sc	4.07,000	
Nonaconone beverages at nome	\$497	\$2,283,300	0%	0%	\$0	\$0	
Health & Personal Care Stores	\$992	\$4,555,800	4%	5%	\$180,210	\$245,030	
	\$440	\$2,022,500	7.5%	10%	\$151,690	\$202,250	
Personal Care Products			0%				
Nonprescription Drugs	\$104	\$477,100		0%	\$0	\$0	
Prescription Drugs	\$386	\$1,771,000	0%	0%	\$0	\$0	
Eyeglasses and Contact Lenses	\$62	\$285,200	10%	15%	\$28,520	\$42,780	
Clothing & Clothing Accessories Store							
	\$2,395	\$10,998,200	6%	9%	\$658,750	\$949,680	
Men's	\$445	\$2,042,200	2%	4%	\$40,840	\$81,690	
Women's	\$645	\$2,962,800	7.5%	10%	\$222,210	\$296,280	
Children's	\$380	\$1,747,100	7.5%	10%	\$131,030	\$174,710	
Footwear	\$486	\$2,230,200	5%	7.5%	\$111,510	\$167,270	
Watches & Jewelry	\$211	\$968,700	5%	7.5%	\$48,440	\$72,650	
Apparel Products and Services	\$228	\$1,047,200	10%	15%	\$104,720	\$157,080	
Sporting Goods, Hobby, Book, &							
Music Stores	\$792	\$3,635,700	4%	6%	\$135,410	\$218,580	
Pets	\$122	\$560,400	5%	7.5%	\$28,020	\$42,030	
Toys and Games	\$182	\$833,700	5%	7.5%	\$41,690	\$62,530	
	₽ I U Z	\$033,700	J /0	7.5/0	\$ <del>4</del> 1,050	\$UZ,JJU	
Sports/Recreation/Exercise	6153	¢.cor 200	F0/	7 50/	¢24.700	¢E2 100	
Equipment	\$152	\$695,800	5%	7.5%	\$34,790	\$52,190	
Photo Equipment and Supplies	\$140	\$644,100	2%	4%	\$12,880	\$25,760	
Reading	\$196	\$901,700	2%	4%	\$18,030	\$36,070	
General Merchandise Stores	\$2,114	\$9,708,300	0%	0%	\$0	\$0	
Miscellaneous Store Retailers	\$1,667	\$7,653,700	0%	0%	\$0	\$0	
Food Services & Drinking Places	\$4,043	\$18,566,000	14%	19%	\$2,611,390	\$3,504,990	
Food Away from Home	\$3,741	\$17,177,900	15%	20%	\$2,576,690	\$3,435,580	
Alcoholic Beverages	\$3,741	\$1,388,100	2.5%	5%	\$34,700	\$69,410	
Aconolic beverages	¥302	\$1,500,100	2.570	370	45-1,700	405,410	

Source: ESRI Business Analyst; BLS Consumer Expenditure Survey; Economics Research Associates, 2008.



**Table 314: Secondary Trade Area Retail Demand Calculations** 

Secondary Trade Area	
Population	15,616
Households	7,778
Avg HH Income	\$128,878

			On-	Site		
	Avg Spending	Trade Area		rket	Potential (	On-Site Sales
Spending Category		Market Potential	Low		Low	High
Furniture & Home Furnishings Stores	\$1,651	\$12,840,800	0%	1%	\$64,190	\$128,420
Furniture	\$1,024	\$7,966,600	0.5%	1%	\$39,830	\$79,670
Floor Coverings	\$147	\$1,144,900	0.5%	1%	\$5,720	\$11,450
Housewares	\$137	\$1,068,300	0.5%	1%	\$5,340	\$10,680
Luggage	\$20	\$155,800	0.5%	1%	\$780	\$1,560
Telephones and Accessories	\$66	\$510,700	0.5%	1%	\$2,550	\$5,110
Household Textiles	\$256	\$1,994,500	0.5%	1%	\$9,970	\$19,950
Electronics & Appliance Stores	\$2,681	\$20.854.300	0%	0%	\$0	\$0
Major Appliances	\$438	\$3,404,500	0%	0%	\$0	\$0
Small Appliances	\$61	\$474,700	0%	0%	\$0	\$0
TV/Video/Sound Equipment	\$1,780	\$13,843,200	0%	0%	\$0	\$0
Computers/Software/Accessories for	4.,, 00	4.5,0.5,200	0,0	0 / 0	40	40
Home Use	\$403	\$3,131,900	0%	0%	\$0	\$0
Building Material & Garden Equipment &						
Supplies Dealers	\$1,746	\$13,577,600	0%	0%	\$6,560	\$13,110
Maintenance and Remodeling Materials	\$1,740	\$15,577,000	0 /0	0 70	\$0,500	\$15,110
Maintenance and Remodeling Materials	\$541	\$4,208,100	0%	0%	\$0	\$0
Lawn and Garden	\$169	\$1,311,100	0.5%	1%	\$6,560	\$13,110
	\$1,036	\$8,058,400	0.5%	0%	\$0,500	\$13,110
Housekeeping Supplies	\$1,036	\$8,058,400	0%	0%	\$0	\$0
Food & Beverage Stores	\$7,463	\$58,044,300	15%	20%	\$28,010	\$56,030
Food at Home	\$6,019	\$46,818,900	0%	0%	\$0	\$0
Alcoholic Beverages	\$720	\$5,602,600	0.5%	1%	\$28,010	\$56,030
Nonalcoholic Beverages at Home	\$723	\$5,622,800	0%	0%	\$0	\$0
Health & Personal Care Stores	\$1,564	\$12,164,000	0.2%	0%	\$29,680	\$59,380
Personal Care Products	\$654	\$5,088,600	0.5%	1%	\$25,440	\$50,890
Nonprescription Drugs	\$154	\$1,196,100	0%	0%	\$0	\$0
Prescription Drugs	\$647	\$5,030,500	0%	0%	\$0	\$0
Eyeglasses and Contact Lenses	\$109	\$848,800	0.5%	1%	\$4,240	\$8,490
, ,	•					•
Clothing & Clothing Accessories Stores	\$3,571	\$27,778,300	0.5%	1%	\$132,600	\$265,190
Men's	\$678	\$5,276,900	0.5%	1%	\$26,380	\$52,770
Women's	\$1,014	\$7,883,900	0.5%	1%	\$39,420	\$78,840
Children's	\$525	\$4,080,200	0.5%	1%	\$20,400	\$40,800
Footwear	\$689	\$5,355,300	0.5%	1%	\$26,780	\$53,550
Watches & Jewelry	\$342	\$2,663,600	0.5%	1%	\$13,320	\$26,640
Apparel Products and Services	\$324	\$2,518,400	0.25%	0.5%	\$6,300	\$12,590
Sporting Goods, Hobby, Book, & Music						
Stores	\$1,314	\$10,220,400	0.5%	1%	\$51,100	\$102,210
Pets	\$212	\$1,650,500	0.5%	1%	\$8,250	\$16,510
Toys and Games	\$262	\$2,035,700	0.5%	1%	\$10,180	\$20,360
Sports/Recreation/Exercise Equipment	\$268	\$2,086,900	0.5%	1%	\$10,430	\$20,870
Photo Equipment and Supplies	\$230	\$1,788,200	0.5%	1%	\$8,940	\$17,880
Reading	\$342	\$2,659,100	0.5%	1%	\$13,300	\$26,590
General Merchandise Stores	\$3,465	\$26,954,500	0%	0%	\$0	\$0
Miscellaneous Store Retailers	\$2,512	\$19,538,700	0%	0%	\$0	\$0
Food Services & Drinking Places	\$5,965	\$46,395,400	1.0%	2.4%	\$446,490	\$1,107,500
Food Away from Home	\$5,516	\$42,902,900		2.5%	\$429,030	\$1,072,570
Alcoholic Beverages	\$449	\$3,492,500	0.5%		\$17,460	\$34,930
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Source: ESRI Business Analyst; BLS Consumer Expenditure Survey; Economics Research Associates, 2008.



Figure 7: Retail Sales Distribution, Primary and Secondary Trade Areas

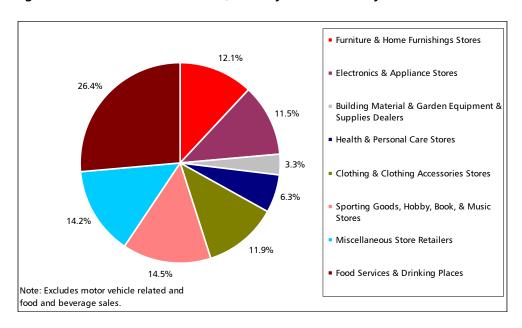
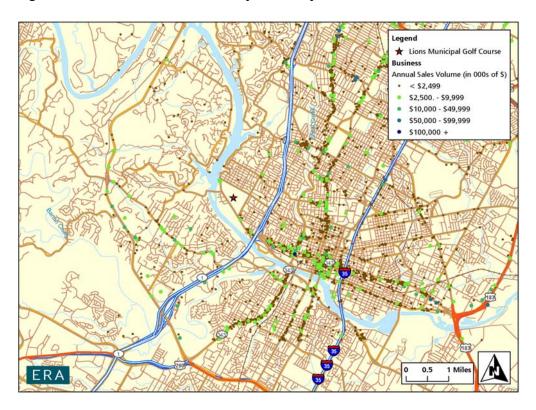


Figure 8: Retail Businesses Near Subject Site by Sales Volume





**Table 35: Sales Productivity by Retail Subcategory** 

	Target S	ales PSF
<del>-</del>	Low	High
Furniture & Home Furnishings Stores	\$400	\$450
Furniture	\$400	\$450
Floor Coverings	\$400	\$450
Housewares	\$400	\$450
Luggage	\$400	\$450
Telephones and Accessories	\$400	\$450
Household Textiles	\$400	\$450
Electronics & Appliance Stores	\$350	\$450
Major Appliances	\$350	\$450
Small Appliances	\$350	\$450
TV/Video/Sound Equipment	\$350	\$450
Computers/Software/Accessories for Home Use	\$350	\$450
Building Material & Garden Equipment & Supplies De	\$250	\$360
Maintenance and Remodeling Materials	\$75	\$100
Lawn and Garden	\$250	\$350
Housekeeping Supplies	\$75	\$100
Food & Beverage Stores	\$400	\$450
Food at Home	\$300	\$350
Alcoholic Beverages	\$400	\$450
Nonalcoholic Beverages at Home	\$100	\$150
Health & Personal Care Stores	\$260	\$360
Personal Care Products	\$250	\$350
Nonprescription Drugs	\$100	\$150
Prescription Drugs	\$100	\$150
Eyeglasses and Contact Lenses	\$350	\$450
Clothing & Clothing Accessories Stores	\$290	\$360
Men's	\$300	\$350
Women's	\$300	\$350
Children's	\$300	\$350
Footwear	\$300	\$350
Watches & Jewelry	\$500	\$750
Apparel Products and Services	\$200	\$300
Sporting Goods, Hobby, Book, & Music Stores	\$250	\$350
Pets	\$250	\$350
Toys and Games	\$250	\$350
Sports/Recreation/Exercise Equipment	\$250	\$350
Photo Equipment and Supplies	\$250	\$350
Reading	\$250	\$350
General Merchandise Stores	\$425	\$475
Miscellaneous Store Retailers	\$425	\$475
Food Services & Drinking Places	\$400	\$450
Food Away from Home	\$400	\$450
Alcoholic Beverages	\$300	\$350
:=::= = =: =: <b>y</b> ==		

Note: Target sales per square foot based on reported productivity rates from comparable national retailers in each category.
Source: US Business Reporter; Economics Research Associates, 2008.

D2.	PRESS CLIPPINGS RE: AUSTIN DEVELOPMENT ACTIVIT	IES BIBLIOGRAPHY

### **Austin American Statesman**

City's tech godfather guides new growth, Nanotech push is next up for lawyer who helped lure, keep top companies

By Kirk Ladendorf

AMERICAN-STATESMAN STAFF

Sunday, February 11, 2007

Planner chosen for UT tract, Brackenridge land in New York firm's hands; tuition rise OK'd By Ralph K.M. Haurwitz AMERICAN-STATESMAN STAFF Thursday, March 27, 2008

Possible sites for medical school emerge, three UT locations near hospital could bridge patient care, research
By Ralph K.M. Haurwitz
AMERICAN-STATESMAN STAFF
Friday, April 18, 2008

Do new ads work? Disney plans Austin lab to find out By Ryan Nakashima ASSOCIATED PRESS May 15, 2008

Council views proposals for downtown plot By Kate Miller Morton AMERICAN-STATESMAN STAFF Friday, May 23, 2008

Green thumbs up to AMD Editorial
June 18, 2008

Vision unveiled for medical training hub, Texas A&M, Texas State and ACC give details on new programs, buildings

By David C. Doolittle

AMERICAN-STATESMAN STAFF

Wednesday, June 18, 2008

Austin jams in the worst way, traffic study shows AMERICAN-STATESMAN STAFF June 20, 2008 Austin apartment glut, rent cuts predicted
Others, however, say market especially for high end, downtown units will stay healthy
By Shonda Novak
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Assistant city manager named July 16, 2008

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Downtown-area office tower is first since Frost By Shonda Novak AMERICAN-STATESMAN STAFF

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City consultant's proposal still a work in progress, and many hurdles remain before concept
could become a reality
By Ben Wear
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ACC Round Rock campus to be pedestrian-friendly Five buildings to be constructed for fall 2010 opening By Ralph K.M. Haurwitz AMERICAN-STATESMAN STAFF Thursday, September 04, 2008 Zilker Park condo project now includes hotel By Shonda Novak AMERICAN-STATESMAN STAFF Friday, September 05, 2008

Australian developer plans ultra-high-end condos on East Riverside By Kate Miller Morton AMERICAN-STATESMAN STAFF Wednesday, September 10, 2008

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City changes approach to neighborhood planning By Rose L. Thayer ASSOCIATE EDITOR September 18, 2008

Demand for UT grad student housing exceeds supply, Graduate Student Assembly opposes recommendation to eliminate Brackenridge tract housing

By Ralph K.M. Haurwitz

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Friday, September 19, 2008

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By Bahart Elder

By Robert Elder AMERICAN-STATESMAN STAFF Saturday, October 11, 2008

State considers huge office complex near Texas 130, Building campus along Texas 130 could send 9,000 workers out of downtown Austin
By Kate Alexander, Kirk Ladendorf
AMERICAN-STATESMAN STAFF
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UT-Austin endowment down nearly \$1 billion this year, lower-than-projected revenue possible for next academic year
By Ralph K.M. Haurwitz
AMERICAN-STATESMAN STAFF
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Watson proposes panel for increasing flagships, also seeks to push economic development

By Ralph K.M. Haurwitz AMERICAN-STATESMAN STAFF November 11, 2008

UT Connecting entrepreneurs to its research in new program. Execs to look for projects at school with earning potential

By Kirk Ladendorf

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Downtown Austin condo market slows down By Shonda Novak AMERICAN-STATESMAN STAFF Wednesday, November 26, 2008

Nine companies join Austin's clean energy partnership Participants include Dell, Freescale, Microsoft By Claudia Grisales AMERICAN-STATESMAN STAFF Thursday, December 04, 2008

Marriott in downtown Austin postponed, No new timetable set for \$275 million project as economic downturn takes toll on financing
By Shonda Novak
AMERICAN-STATESMAN STAFF
Saturday, December 06, 2008

Retirement community benefits from Texas Exes ties Thursday, December 11, 2008

Tokyo Electron honcho to lead chamber with eye on renewable energy By Kirk Ladendorf AMERICAN-STATESMAN STAFF Saturday, December 13, 2008

Domain retail projects delayed a year Whole Foods, Saks, Nordstrom on hold till 2012 By Shonda Novak AMERICAN-STATESMAN STAFF Tuesday, December 16, 2008

Work to start on Seaholm redevelopment late next year By Shonda Novak AMERICAN-STATESMAN STAFF Tuesday, December 16, 2008

Dell Children's Medical Center wins prestigious environmental award
Campus is only hospital in world to receive U.S. Green Building Council's highest rating
By Patrick George
AMERICAN-STATESMAN STAFF
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Google closing its Austin office

By Lori Hawkins |

Wednesday, January 14, 2009, 05:36 PM

Austin lawyer seeks to attract more alternative energy projects
Pike Powers says area's chip manufacturing businesses could provide a base
By Kirk Ladendorf
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Austin's sunny future, if it prepares, The Austin area is slowly but steadily losing chip plant jobs, and that could threaten its high tech reputations and future
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#### ADVANCED BATTERY CONSORTIUM

Austin joins charge to land high-tech battery consortium

Central Texas beginning push to recruit national alliance developing next generation of cleaner vehicle power

By Kirk Ladendorf, Dan Zehr AMERICAN-STATESMAN STAFF Saturday, February 07, 2009

Energy startup moving to Austin, Illinois-based SmartSpark to hire about 20 local workers for debut of solar power devices

By Lori Hawkins AMERICAN-STATESMAN STAFF Monday, February 09, 2009

ColoVista members, owners hope new owner saves once-acclaimed layout in the pines Semi-private club in Bastrop was closed abruptly last week after sitting three years on an increasingly weak market.

By Kevin Robbins AMERICAN STATESMAN STAFF Tuesday, February 10, 2009

Report from our online survey of readers' workday and weekend lives By Eileen E. Flynn AMERICAN-STATESMAN STAFF Tuesday, February 10, 2009

Warehouse giant marketing huge block of space, ProLogis selling off 33 million square feet of industrial space in 14 states, including 9 million square feet in Austin and other parts of Texas By Claudia Grisales

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Solar: IBM hopes to license cooling technology, IBM says new cell focuses sunlight to boost power yield

By Bob Keefe

WEST COAST BUREAU
February 10, 2009

Spring holds a high-rise party - Amid uncertain condo market, 42-story tower celebrates start of construction its top floor

By Shonda Novak

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Wednesday, February 25, 2009

Austin startup reaches for place in green-tech movement - ActaCell seeks to build cheap, powerful, safe and durable battery cells

By Kirk Ladendorf

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Monday, March 09, 2009

Wendler: Was the Mueller project a mistake? Ed Wendler Jr., LOCAL CONTRIBUTOR Wednesday, March 11, 2009

Area home sales fall in February, but median price rises AMERICAN-STATESMAN STAFF Friday, March 20, 2009

Texas to submit battery consortium bid- More than 30 companies will help winning state seek stimulus money to develop hybrid vehicle battery technology

By Kirk Ladendorf

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Sunday, March 22, 2009

Slowdown pushes up Central Texas office vacancies - Rate is highest since 2004; brokers see big new deals on the horizon By Shonda Novak AMERICAN-STATESMAN STAFF Saturday, April 04, 2009

Austin gets mixed grades in office market report By American-Statesman staff Tuesday, April 7, 2009, 01:10 PM

Texas' hopes for battery center fizzle, Backer of effort says state may pursue own development project after Kentucky beats out Texas with incentives

By Kirk Ladendorf

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By Ralph K.M. Haurwitz
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Lady Bird Lake development rules coming to a vote, Mayoral politics at play in decision By Marty Toohey AMERICAN-STATESMAN STAFF Saturday, April 25, 2009

Austin City Council passes height limits along Lady Bird Lake By Marty Toohey Thursday, June 11, 2009, 10:40 PM

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Dallas considers letting developers levy taxes
By RUDOLPH BUSH / The Dallas Morning News

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Is Austin's Second St. a success?
By Kate Harrington ABJ Staff
Friday, March 13, 2009

American Campus raises nearly \$200M in stock offering Austin Business Journal Staff Tuesday, May 12, 2009, 9:59am CDT

A look at one of Austin's largest landlords – Thomas eyes cash; Austin 'outperforms' By Kate Harrington Wednesday, March 18, 2009

# **Micellaneous Publication**

Transformation Takes Flight
Perry Announces Emerging Technology Fund Investments in Central Texas Companies
OFFICE OF THE GOVERNOR
November 11, 2008

From airport to mixed use, green community by Anne Morris Landscape and Hardscape Construction



I am sending some spa revenue data for the Brackenridge discussion based on 2007 data compiled by PKF. Given the location, I would think a spa could do well, but it should be remembered that the economics of the hotel have to work first, with the spa as a collateral use. As stand alone elements (without a hotel), destination spas only represent one-half of one percent of all spa's in the U.S., so I would think we need to resolve hotel feasibility first, with a spa component adding to total revenues but not carrying the business model. I'll be in the rest of this week if you can give me a call.\

Regards,

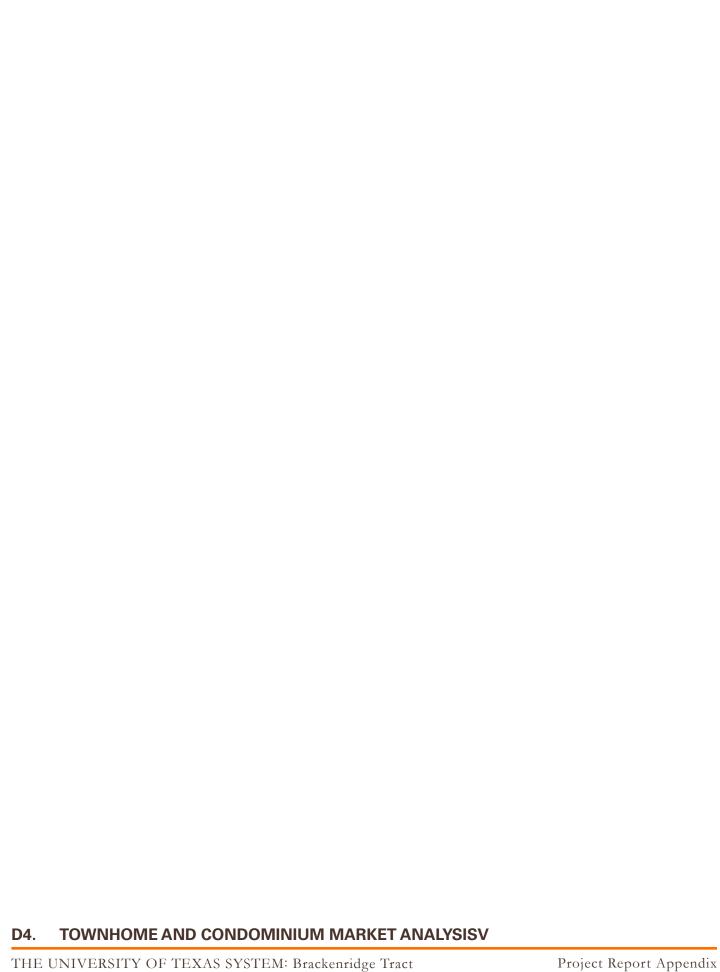
Tom

## **Hotel Spa Revenue Information**

As context for our discussions, I have received some information from our hotel expert on spa revenues (for spas located in hotels); the data is based on PKF summary data as well as ERA's experience with other projects. It should be noted that this information is for hotel locations, but does not include stand-alone destination spas, but since the Glen Isle model is located within an upscale hotel, we would suggest that the numbers offer a reasonable range of comparables. For purposes of the call, Patty included \$10 million in annual spa revenues. Depending upon the example, that may be considered "high" or "aggressive, based on the numbers below. We can discuss the revenue assumption further tomorrow.

- Hotel Spa average revenues grew about 5% between 2006 and 2007 (the latest year for which data was available)
- Hotel occupancies, on average, are expected to drop by over 5% in 2009 due to the economic downturn, with estimated spa revenues declining in a parallel pattern
- Based on a survey of Hotel Spas whose ADR was \$257.14 in 2007, spa revenues per hotel averaged \$3,166 per room, or \$130.63 per square foot of spa space (before deductions for undistributed expenses and fixed charges)
- Another measure is the Revenue per Available Room, or RevPAT, linking revenues to the number of treatment rooms. The average RevPAT from the survey was \$367 per day; the lowest total was \$241 per day and the highest was \$443 per day. The size of the spa also apparently affects revenues, with RevPAT varying from \$300 per room (for 1-5 treatment rooms) up to over \$443 per room (for 16-20 treatment rooms). At an average room size of 120 square feet, the total square footage of treatment rooms (not including steam rooms, showers, meditation, juicebars, exercise and relaxation areas) would be a maximum of about 600 sf net, while the larger room total would need 2400 sf net of treatment rooms, assuming sufficient market support. According to the survey, the weakest performing RevPAT was about \$240 per room (with 11-15 treatment rooms). Spas with more than 20 treatment rooms also averaged over \$400 per treatment room.
- On average, spa departmental sales totaled 3.9% of total hotel revenues
- Resort Hotel spas generally yield higher average revenues than urban hotel spas

- Annual revenues vary from site to site: the Cal-a-Vie spa in Vista California generated \$2.8
  million in revenues, while the Miraval Resort spa in Tucson generated \$6.8 million in
  revenues; the Pritikin Longevity Center and Spa in Aventura Florida (not so much a resort as
  an upscale fitness and weigh-loss program in a deluxe setting) generated \$4.9 in revenues
- Canyon Ranch, the quality standard mentioned by Don, has two well-established destination locations (Tucson, Arizona in 1979 and Lenox, Massachusetts in 1989) plus three additional locations (Las Vegas, Kissimmee Florida and aboard the Queen Mary II). Annual revenues totaled \$45 million for all five locations
- Employment figures for the spas are relatively high for their sizes, a product of the number of rooms, the number of treatments per day and the popularity of massages as a revenue center (accounting for almost 60% of spa revenues). Cal-a-Vie employs 105 persons; Pritikin employs 150; Miraval employs 200; and Canyon Ranch employs 1,000 persons across all locations/average of 200 per site.
- Massages account for almost 56% of total departmental sales for hotel-based spas; skin care
  and body work represent almost 19% of total revenues, and salon services include 10.7%.
   Retail products (spa robes, spa slippers, loofah's, skin care products, etc.) represent just over
  10% of total revenues.





# Market Analysis to support the Conceptual Master Plan for Development of the Brackenridge Tract (Townhome and Condominium)

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On

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## Townhome/Condominium Market Trends in the Austin MSA

Historically, townhome and condominium projects in the Austin MSA have been clustered in the central city, mostly in neighborhoods close to downtown, the Arboretum area and the University of Texas. Over the last few years, that area has expanded to include more neighborhoods such as Tarrytown, Bouldin Creek, Travis Heights, Barton Creek, Lakeway, East Austin and the Central Business District (CBD). The combination of strong consumer demand for housing and the rapid escalation of land prices in desirable neighborhoods has provided opportunities for new, higher density housing options. The most visible, and perhaps most successful, emerging market is the CBD. Beginning in 1997, almost 900 new condominiums have been completed and absorbed in the downtown area, and many units have sold for prices that are well above \$300 per square foot.

The current market trend has a solid footing in basic land economic fundamentals, unlike the condominium construction boom in the mid-eighties, which was fueled by favorable income tax treatment of "passive" real estate investments. In addition to rising single-family home prices, the demand for higher density housing has a strong demographic basis in ageing baby-boomer households and busy young professionals.

In the late nineties there were almost no new condominium or townhome projects for sale in Austin. Then in 2000, suburban construction began with the Courtyard Homes at Cobblestone (59 units) and Bouldin Creek Condominiums (33 units). Both projects were enthusiastically received by the young professional homebuyer and sold out quickly. Liberty Hill was also built in 2000, and sold rapidly to both young professionals and the empty nesters that live in the Westlake area. The success of these three projects enticed other developers to explore the market, and most of the new product has been well received. In roughly the same time period, the downtown condominium market began to emerge, expanding from two small "adaptive reuse" projects on East Fifth St., to several new condominium towers.

## **Current Market Conditions**

The townhome/condominium market in the Austin area is rapidly gaining strength, and is emerging as an important segment of the new home market. Since 2001, the number of new townhome/condominium permits issued by the City of Austin has increased from 81 to 855 in 2006, an increase of 955.5%. Further, the number of existing units sold through MLS increased from 1,684 in 2000 to 2,767 in 2007, an increase of 64.3%. While it is clear that one of the motivations to buy a condominium unit is its relatively low price, the average price of a condominium/townhome unit sold through MLS has consistentally increased and is now (2008 through September) at \$209,668 for 1,248 sq. ft., or \$168 per sq. ft., a 52.5% increase since 2000 when the average sales price was reported at \$137,487, or \$168 per sq. ft.

One of the most interesting aspects of this higher density market is the degree to which homebuyers are accepting new innovative product, whether it is stark urban lofts in East Austin (The Pedernales), or elegant stone townhomes in South Austin (Kinney Muse) or expensive high-rise condominiums (5 Fifty-Five).

There are currently dozens projects under construction or in the initial presales period. Most of these projects are located in central city neighborhoods on major arterials close to downtown, but there are also a number of new projects in suburban areas like Lakeway, Cedar Park, Round Rock and Georgetown.

Table (1)

New Townhome/Condo Sales

Austin MLS Region

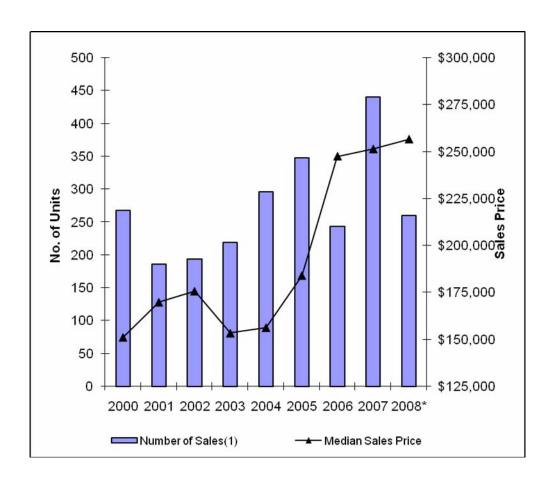
Year	Number of Sales <sup>(1)</sup>	Average Sales Price	Median Sales Price	Average SF	Average \$/SF
2000	268	\$195,477	\$150,975	1,440	\$135.75
2001	186	\$202,343	\$169,725	1,606	\$125.99
2002	194	\$221,665	\$175,625	1,659	\$133.61
2003	219	\$189,733	\$153,220	1,579	\$120.16
2004	296	\$208,247	\$156,112	1,526	\$136.47
2005	348	\$222,020	\$183,950	1,550	\$137.95
2006	244	\$268,890	\$247,620	1,433	\$187.64
2007	441	\$283,305	\$251,460	1,551	\$186.80
2008*	260	\$312,348	\$256,699	1,426	\$219.04

Source: Austin Board of Realtors, MLS Database; Prepared by Capitol Market Research, August 2008

(1) Most new condominium units are sold by an "on site" sales person, not through MLS

\*through September 25, 2008

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# **Employment Growth**

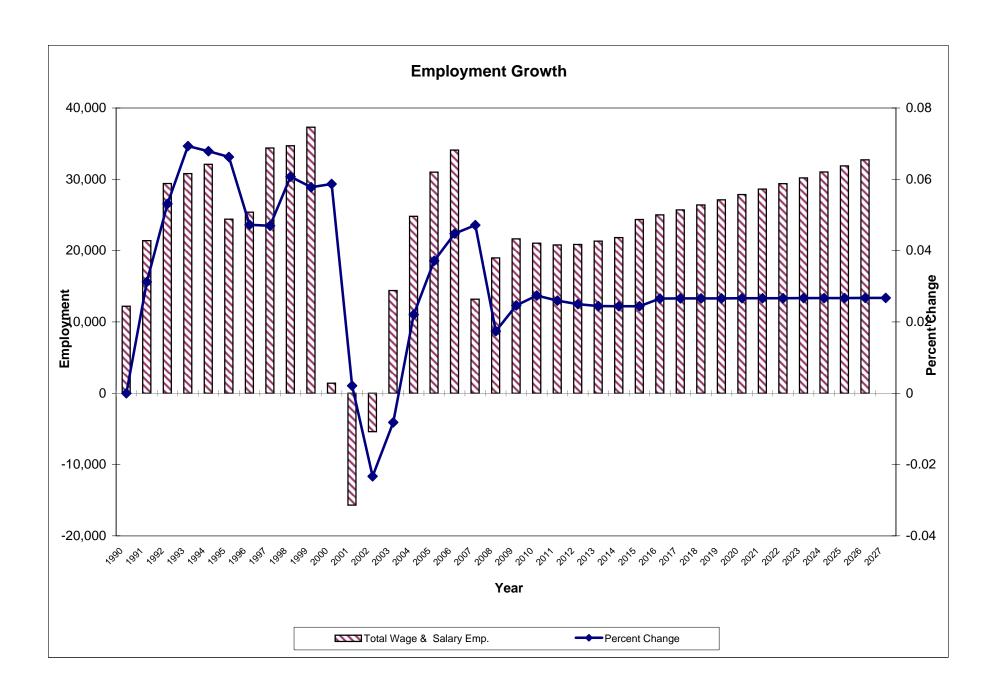
Employment growth in the Austin area had been steadily building strength over the last few years with annual increases ranging from 24,400 (1996) to 37,300 (2000). In 1996 the pace of employment growth seen in the early nineties slowed as a result of the worldwide glut of computer chips and failed dot.com's. The market regained momentum in between 1998 and 2000, but overall the explosive growth in 2000 evaporated with the dot.com bust in 2001 and the Austin MSA actually experienced negative job growth in 2002 and 2003. Since that time, the economy has begun to recover and 14,400 jobs were added in 2004, an increase of 2.21% and 24,800 jobs were added in 2005, an increase of 3.72%. According to recently published employment data from the Texas Workforce Commission, the Austin MSA added 31,000 jobs in 2006, a 4.48% increase, and 34,100 jobs in 2007, a 4.72% increase. Forecasted annual increases in the Austin MSA employment for 2008 through 2027 are forecasted to average 2.57%, as shown in Table (2). The forecast shown is a "consensus" forecast derived from two econometric forecasting firms that track the Austin market, Economy.com and Texas Perspectives (TxP).

Table (2)
Historical & Projected Employment Growth
Austin MSA

Year	Total Wage & Salary Emp.	Annual Change	Percent Change
1990	390,600		
1991	402,800	12,200	3.12%
1992	424,200	21,400	5.31%
1993	453,600	29,400	6.93%
1994	484,400	30,800	6.79%
1995	516,500	32,100	6.63%
1996	540,900	24,400	4.72%
1997	566,300	25,400	4.70%
1998	600,700	34,400	6.07%
1999	635,400	34,700	5.78%
2000	672,700	37,300	5.87%
2001	674,100	1,400	0.21%
2002	658,400	-15,700	-2.33%
2003	653,000	-5,400	-0.82%
2004	667,400	14,400	2.21%
2005	692,200	24,800	3.72%
2006	723,200	31,000	4.48%
2007	757,300	34,100	4.72%
2008	770,486	13,186	1.74%
2009	789,465	18,979	2.46%
2010	811,103	21,638	2.74%
2011	832,149	21,046	2.59%
2012	852,940	20,791	2.50%
2013	873,793	20,853	2.44%
2014	895,120	21,327	2.44%
2015	916,952	21,832	2.44%
2016	941,311	24,359	2.66%
2017	966,332	25,021	2.66%
2018	992,034	25,702	2.66%
2019	1,018,435	26,401	2.66%
2020	1,045,555	27,120	2.66%
2021	1,073,413	27,858	2.66%
2022	1,102,031	28,617	2.67%
2023	1,131,428	29,397	2.67%
2024	1,161,627	30,199	2.67%
2025	1,192,649	31,022	2.67%
2026	1,224,518	31,869	2.67%
2027	1,257,257	32,739	2.67%

Source: Texas Workforce Commission, Annual Average Wage &
Salary Employment, Adjusted Annual Average, 1990-2007
Forecasted employment increase based upon forecasts obtained from
Texas Perspectives Aug 2008 and Economy.com May 2008

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# **Austin Area Condominium Housing Demand**

Table (3) below provides an estimate of new condominium housing demand in the Austin MSA as a result of the job increases anticipated over the next twenty years. The employment forecast is a "consensus" forecast derived from two econometric forecasting firms that track the Austin market, Economy.com and Texas Perspectives (TxP) (May 2008) and it shows an average annual increase of 2.57% through 2027. See Table (2). There is considerable evidence that the demand for townhomes and condominiums is rapidly increasing as new product becomes available. This increase in demand is fueled by growth in those demographic segments that have a greater propensity to buy condominiums and the steady increase in single family home prices in virtually every market area. Demand for owner-occupied units is divided among different types of housing products and Capitol Market Research has estimated condominium demand to be approximately 10.0% of the total owner unit demand in 2008 (the average of total MLS sales since January 2006), increasing to 15.0% by 2027 based on the historical increase in the proportion of condominium sales as documented by the Austin Board of Realtors Multiple Listing Service (MLS). Based on these data and assumptions, total new condominium housing demand should average 1,398 units per year from 2008 through 2027.

Table (3)

Condominium Housing Demand
Austin MSA

Year	Employment Increase	Population Increase	Household Size	New Households	New Owner Households	Condo Demand
2008	13,186	25,455	2.57	9,905	5,764	576
2009	18,979	36,639	2.57	14,257	8,297	852
2010	21,638	41,772	2.57	16,254	9,460	996
2011	21,046	40,630	2.57	15,809	9,201	993
2012	20,791	40,136	2.57	15,617	9,089	1,005
2013	20,853	40,256	2.57	15,664	9,116	1,032
2014	21,327	41,172	2.57	16,020	9,324	1,080
2015	21,832	42,147	2.57	16,400	9,545	1,130
2016	24,359	47,025	2.57	18,298	10,649	1,289
2017	25,021	48,304	2.57	18,795	10,939	1,353
2018	25,702	49,617	2.57	19,306	11,236	1,419
2019	26,401	50,968	2.57	19,832	11,542	1,488
2020	27,120	52,355	2.57	20,372	11,856	1,560
2021	27,858	53,781	2.57	20,926	12,179	1,635
2022	28,617	55,246	2.57	21,496	12,511	1,712
2023	29,397	56,752	2.57	22,082	12,852	1,793
2024	30,199	58,299	2.57	22,684	13,202	1,876
2025	31,022	59,889	2.57	23,303	13,562	1,963
2026	31,869	61,523	2.57	23,939	13,932	2,053
2027	32,739	63,202	2.57	24,592	14,313	2,147

Source: Employment Forecast from Table (2)

Population to employment ratio held constant at 0.518

Household size assumed to remain constant at 2.57

Renter demand of 58.2% based on 2000 tenure split
Condo demand set at 10.0% in 2008, increasing to 15% in 2027 based on percent increase of condominium/townhome sales on Austin MLS

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#### Central Market Area Condominium/Townhome Market Conditions

#### Overview

In October 2008, Capitol Market Research surveyed the 43 "new" condominiums projects in the Central market area that, when completed, will have a total of 3,104 units. Currently, the market area has 2,168 "new" units complete and of these, *only 136 (6.3%) are available for sale*. There are also an additional 869 new units under construction at eight projects that have not yet delivered units. Among these projects, 348 units (40.1%) have already been reserved or put under contract. Average sales prices among the 43 new condominium projects range from a low of \$145,000 to a high of \$1,383,848 and average \$455,660, (\$330 per square foot, with a range of \$104 to \$653 per square foot). Of the 3,104 new units planned in the market area, 2,168 (69.9%) have been built (completed) since the beginning of 2001.

#### **New Construction**

New condominium and townhome construction has increased greatly in the Central Market Area since the early 2000's when only a handful of "new" properties existed, including the Brown Building and the Brazos Lofts, both condominium conversion projects in downtown Austin. The condominium market in Central Austin has seen a substantial increase in interest from buyers, seeking a more "urban" lifestyle, in a low maintenance residence with easy access to employment and entertainment opportunities in and around downtown Austin. In addition, the rising cost of single family housing in the Central market area has driven many buyers who want to live in the Central market area (without renting) to look at condominium or townhome living as a viable option because single family home ownership is not financially possible. The average price of a single family home in the Central market area has increased 55.5% between 2000, when it was \$333,790, and 2008 (through October) when it was reported at \$519,112. The market has responded to buyer needs and currently there are a wide variety of product types in the market area. Downtown Austin offers high rise condominium towers at the recently completed 360 Condominiums, Milago and The Shore, and currently five other high rise properties are under construction including The "W" Residences, The Four Seasons, The Austonian, Spring and La Vista on Lavaca. In addition, there are several mid rise condominium "flats" offered in and near the west campus market area including Presidio at Judges Hill, The Cambridge at 25th and The Verdance. There are also several three story attached townhome projects located off of Enfield in Tarrytown and in Hyde Park including West Villagio, Norwalk Brownstones, and Guadalupe 5.

Finally, and just within the last 18 months, a handful of condominium conversion properties have been brought to the market throughout the Central market area including Castle Hill Terrace in Clarksville and The Avenel in Hyde Park, near the UT campus, as well as two conversion projects of former downtown office buildings, Brazos Place and Sabine on Fifth.

### **Absorption**

Absorption rates among the 34 projects vary considerably, from 0.0 units per month (at two properties that just began marketing in October 2008), to 20.5 units per month at the recently completed 360 Condominiums. Projects with a smaller average unit size (less than 1,000 sq. ft.) have sold at a faster pace than those with a larger average unit size. Projects with an average unit size less than 1,000 sq. ft. have achieved an average absorption of 3.65 sales per month, which is 61.5% higher than the market area average absorption rate, and 110 % higher than the absorption rate achieved by projects with an average unit size over 1,000 sq. ft. (1.74 units per month). Typically, units with a lower price sell more rapidly than higher priced units. However, this is not the case in the Central market area. Projects with an average price per sq. ft. under \$300 have achieved an absorption rate of 1.16 units per month, while projects priced over \$300 per sq. ft. have achieved a 206% higher absorption rate of 3.55 units per month. Finally, projects located in the downtown (CBD) market area have achieved an absorption rate, 4.22 sales per month, which is 86.7% higher than the overall market area average and 414.6% higher than the absorption rate of those projects located outside of downtown, but within the Central market area (0.82 sales per month). Based on the data collected from the 34 projects built in this market area, the average absorption rate for the new condominium product in the market area is 2.26 units per month.

# **Pricing**

The average unit price among the 34 projects currently marketing also varies widely from a low of \$145,000 (\$207 per sq. ft.) at Seidler's Oak, a condominium conversion of a former apartment project, to a high of \$1,484,383 (\$653 per sq. ft.) at The Austonian, a luxury condominium high-rise currently under construction in downtown Austin. The average price among the 34 new condominiums surveyed is \$455,660 or \$330 per square foot.

#### **Market Outlook**

Based on a historical review of the condominium and townhome sales data, coupled with the proliferation of new condominiums completed and under construction today, it is evident that the

trend towards urban infill housing in Central Austin is becoming a significant market segment, offering buyers an opportunity to reside in a urban environment with easy access to major employers in the downtown area as well to eating, drinking and shopping establishments on both sides of Town Lake. Further, with the continued increase in the cost of housing in Central Austin, buyers looking for a Central location are increasingly open to high density, attached housing product types.

Table (4) **Townhome and Condo Sales Central Market Area** 

Year	Total Sales	Average Sales Price	Median Sales Price	Average SF	Average \$/SF
1999	566	\$122,949	\$96,750	986	\$124.69
2000	387	\$159,860	\$129,700	1,010	\$158.28
2001	339	\$155,017	\$125,000	961	\$161.31
2002	430	\$163,950	\$139,950	1,039	\$157.80
2003	471	\$164,714	\$143,500	1,181	\$139.47
2004	508	\$197,860	\$154,500	1,079	\$183.37
2005	645	\$212,932	\$161,000	1,105	\$192.70
2006	725	\$241,002	\$189,000	1,113	\$216.53
2007	704	\$278,455	\$224,000	1,130	\$246.42
2008*	461	\$253,749	\$223,000	1,048	\$242.13

Source: Austin Board of Realtors, MLS Database; MLS Areas 1B, 4, DT and UT

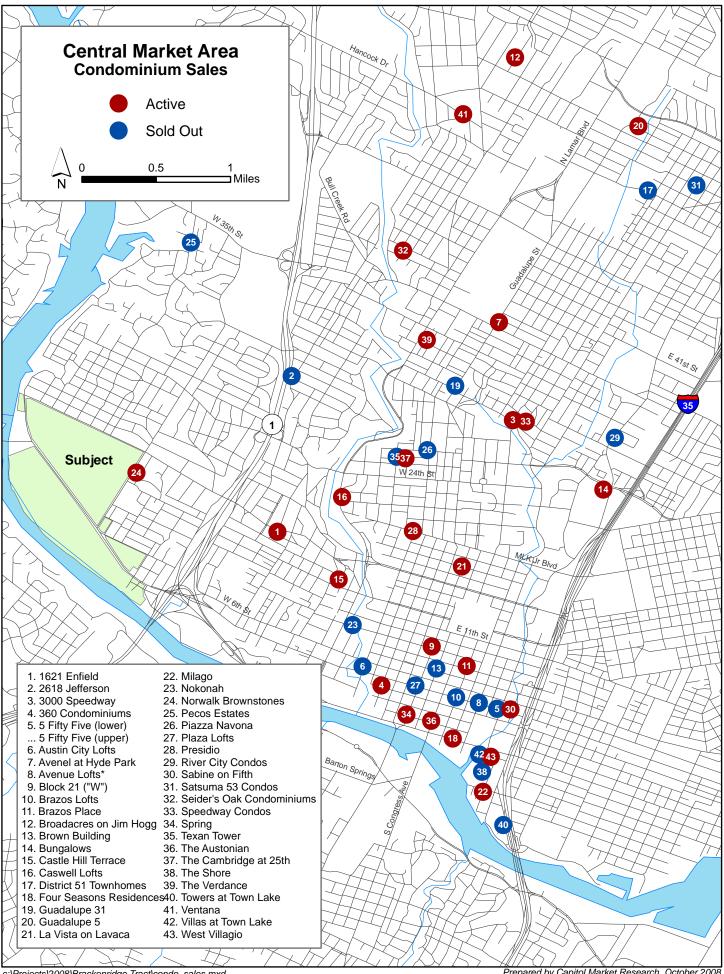
Prepared by Capitol Market Research, October 2008

condo\_sum.xls

\*through September 2008

# Table (5) Central Market Area Condominium Sales New Product Activity

Map No.	Project	Year	Address	# Units	# Units Complete	Contracts/ Sales	%	Date of Initial Marketing	Absorption Rate	Average Price	Average Sq. Ft.	Price per Sq. Ft.
1	1621 Enfield	2007	1621 Enfield	6	6	1	16.7%	May 2007	0.06	\$586,500	2,070	\$283
2	2618 Jefferson	2007	2618 Jefferson	4	4	4	100.0%	July-07	0.29	\$509,900	2,155	\$237
3	3000 Speedway	2008	3000 Speedway	5	5	3	60.0%	April-08	0.83	\$489,900	1,440	\$340
4	360 Condominiums	2006	4th and Nueces	430	430	421	97.9%	February-07	20.05	\$355,464	944	\$377
5	5 Fifty Five (lower)	2005	555 East Fifth St.	52	52	52	100.0%	October-04	1.93	\$440,399	1,230	\$358
	5 Fifty Five (upper)	2005	555 East Fifth St.	46	46	46	100.0%	October-04	1.64	\$961,382	1,793	\$536
6	Austin City Lofts	2004	506 West Avenue	82	82	82	100.0%	September-01	1.68	\$560,000	1,732	\$323
7	Avenel at Hyde Park	2007	3815 Guadalupe	22	18	2	9.1%	August-07	0.13	\$157,268	767	\$205
8	Avenue Lofts*	1999	410 East Fifth Street	37	37	37	100.0%	n.a.	n.a.	\$212,752	991	\$215
9	Block 21 ("W")	2010	310 West 2nd Street	160	0	68	42.5%	August-07	5.23	\$1,077,583		
10	Brazos Lofts*	2001	201 E.Fifth Street	38	38	38	100.0%	n.a.	n.a.	\$329,613	1,442	\$229
11	Brazos Place	2007	800 Brazos St.	74	74	64	86.5%	January-07	3.20	\$342,062	938	\$365
12	Broadacres on Jim Hogg	2005	5600 Jim Hogg	8	4	4	50.0%	April 2005	0.15	\$395,000	2,117	\$187
13	Brown Building*	2001	710 Colorado	89	89	89	100.0%	September-00	1.71	\$288,618	1,049	\$275
14	Bungalows	2007	Dean Keeton and Red River	52	52	12	23.1%	June 2007	0.71	\$171,866	683	\$252
15	Castle Hill Terrace	2007	1212 Castle Hill	13	13	10	76.9%	October-07	0.77	\$171,867	684	\$251
16	Caswell Lofts	2006	2207 N. Lamar	42	42	39	92.9%	February-06	1.18	\$305,840	1,065	\$287
17	District 51 Townhomes	2005	100 E. 51st	10	10	10	100.0%	August-05	0.56	\$410,900	2,076	\$198
18	Four Seasons Residences	2009	98 San Jacinto Boulevard	148	0	70	47.3%	May 2007	4.38	\$1,072,952	1,733	\$619
19	Guadalupe 31	2006	3016 Guadalupe	38	38	38	100.0%	October-05	1.73	\$269,455	988	\$273
20	Guadalupe 5	2008	502 W. 55th St.	5	0	0	0.0%	October-08	0.00	\$504,500	1,508	\$335
21	La Vista on Lavaca	2008	17th and Lavaca	31	0	10	32.3%	March-07	0.56	\$793,442	1,251	\$634
22	Milago	2005	54 Rainey Street	240	240	239	99.6%	January-05	7.03	\$308,085	1,098	\$281
23	Nokonah	2003	901 W 9th St.	96	96	96	100.0%	March-00	2.34	\$793,590	1,623	\$443
24	Norwalk Brownstones	2007	1314 Norwalk	6	6	1	16.7%	June-07	0.06	\$655,000	2,183	\$300
25	Pecos Estates	2007	3301 Pecos	8	8	8	100.0%	July 2006	0.29	\$484,369	1,958	\$247
26	Piazza Navona*	2005	713 W. 26th St.	55	55	55	100.0%	September-04	3.06	\$249,274	1,069	\$233
27	Plaza Lofts*	2002	311 West Fifth St.	60	60	60	100.0%	June-00	1.07	\$522,000	1,425	\$366
28	Presidio	2006	812 West Ave.	44	0	29	65.9%	June-06	1.00	\$434,659	1,194	\$364
29	River City Condos	2004	911 Keith	15	15	15	100.0%	January-04	0.94	\$284,233	1,251	\$227
30	Sabine on Fifth	2007		80	80	76	95.0%	April 2007	4.00	\$331,150	992	\$334
31	Satsuma 53 Condos	2005	508 E. 53rd St.	4	4	4	100.0%	September-05	0.24	\$259,900	1,275	\$204
32	Seider's Oak Condominiums	2007		16	16	5	31.3%	June-07	0.29	\$145,000	701	\$207
33	Speedway Condos	2006		26	26	26	100.0%	April-05	1.08	\$240,875	833	\$289
34	Spring	2006	' '	246	0	125	50.8%	March-07	6.94	\$484,085	971	\$499
35	Texan Tower	2005		39	39	39	100.0%	September-05	2.17	\$277,887	1,116	\$249
36	The Austonian	2008		219	0	45	20.5%	May 2007	2.81	\$1,383,848	2,120	\$653
37	The Cambridge at 25th	2007	910 W. 25th Street	49	49	40	81.6%	September-07	3.08	\$349,659	1,244	\$281
38	The Shore	2006		200	200	197	98.5%	March-06	6.16	\$406,245	1,113	\$365
39	The Verdance	2008	3200 Grandview Street	16	0	1	6.3%	May 2007	0.06	\$768,908	2,626	\$293
40	Towers at Town Lake*	1983		200	200	200	100.0%	n.a.	n.a.	\$246,002	1,550	\$159
41	Ventana (conversion)	2006		40	40	39	97.5%	April-06	1.26	\$197,349	875	\$226
42	Villas at Town Lake*	1982		40	40	40	100.0%	n.a.	n.a.	\$202,450	1,064	\$190
43	West Villagio	2007	2505 Enfield	13	13	0	0.0%	October-08	0.00	\$617,187	2,486	\$248
	Totals/Average	2001	2000 Erillold	3.104	2,227	2,440	78.6%	30,000,00	2.27	\$455,660	1,382	\$330



#### Central Market Area Condominium/Townhome Demand Forecast

Between 1990 and 2000, the subject market area captured only 1.34% of the increase in population in the Austin MSA. However, in 2000 the market area population accounted for a much larger 6.17% share of the total Austin MSA population, according to the 2000 U.S. Census data. Historically, the area was viewed as "built out" and attracted very little new development, aside from the occasional small townhome or apartment project. Since 2000, a strong surge in redevelopment activity has occurred, resulting in the replacement of older single family homes with new (and often larger) single family homes and larger multi-family projects. Consequently, CMR believes that a market capture rate of 6.17% is a more realistic estimate of the market potential for redevelopment over the next twenty years. Therefore, a 6.17% market capture rate applied to the population forecast generated from future employment growth, which yields an average population growth for the subject market area of 2,975 people per year from 2008 through 2027. We estimate that the tenure split will remain at approximately 35.0%, which was the percentage of owner households in the market area reported in the 2000 US Census.

As recorded earlier, we believe that there will be continued interest from buyers in the condominium and townhome market as homeowners seek a more "urban" lifestyle that offers a low maintenance residence and easy access to employment and entertainment opportunities, in and around downtown Austin. In addition, the rising cost of single family housing in the central market area makes an alternative housing product more appealing to those buyers who want a more affordable alternative in Central Austin. By using the forecast described above and assuming a maintenance of the current household size, an estimated new condominium/townhome housing demand which averages 306 units per year through 2027 is indicated, as shown in Table (6) on the following page.

The forecast based on growth does not take into account "turnover" demand which is based on the relocation of an existing household from within the market area. This turnover demand could easily double the demand based solely upon growth.

Table (6)
Condominium/Townhome Unit Demand
Central Market Area

	Forecasted MSA Population	Capture	New	Household	New	%	%	
Year	Growth	Rate	Population	Size	НН	Owner	Condo	Condo Demand
2008	25,455	6.17%	1,569	1.87	839	35.0%	48.4%	142
2009	36,639	6.17%	2,259	1.87	1,208	35.0%	49.0%	207
2010	41,772	6.17%	2,575	1.87	1,377	35.0%	49.6%	239
2011	40,630	6.17%	2,505	1.87	1,340	35.0%	50.2%	236
2012	40,136	6.17%	2,475	1.87	1,323	35.0%	50.8%	235
2013	40,256	6.17%	2,482	1.87	1,327	35.0%	51.5%	239
2014	41,172	6.17%	2,538	1.87	1,357	35.0%	52.1%	247
2015	42,147	6.17%	2,598	1.87	1,390	35.0%	52.7%	256
2016	47,025	6.17%	2,899	1.87	1,550	35.0%	53.3%	289
2017	48,304	6.17%	2,978	1.87	1,593	35.0%	53.9%	300
2018	49,617	6.17%	3,059	1.87	1,636	35.0%	54.5%	312
2019	50,968	6.17%	3,142	1.87	1,680	35.0%	55.1%	324
2020	52,355	6.17%	3,228	1.87	1,726	35.0%	55.7%	337
2021	53,781	6.17%	3,316	1.87	1,773	35.0%	56.3%	350
2022	55,246	6.17%	3,406	1.87	1,821	35.0%	56.9%	363
2023	56,752	6.17%	3,499	1.87	1,871	35.0%	57.6%	377
2024	58,299	6.17%	3,594	1.87	1,922	35.0%	58.2%	391
2025	59,889	6.17%	3,692	1.87	1,974	35.0%	58.8%	406
2026	61,523	6.17%	3,793	1.87	2,028	35.0%	59.4%	422
2027	63,202	6.17%	3,897	1.87	2,084	35.0%	60.0%	438

Prepared by: Capitol Market Research, October 2008

Notes: Population forecast based employment forecast shown in Table (2). Capture rate based on market area share of MSA Population in 2000 according to 2000 US Census data. Household size from 2000 Census data. Tenure split set at 2000 rate for market area. Percent condominiums is set at 48.4% based on percent of all market area sales that were condominium/townhomes and increased to 60% in 2027 based on historical increase in condo/th sales between 2002-2008.

Dem.ForecastCalc\_condo.xls

# **Planned Projects in the Central Market Area**

In order to accurately forecast the absorption rate for the proposed project, it is necessary to identify the other tracts in the market area that are zoned for multifamily use and that may be developed as condominiums within the forecast time period. Table (7) lists the projects whose location, size and development program indicate that they are currently, or may become, competitive with the subject. Projects are defined as being "competitive" if the land is currently zoned appropriately for condominium or multifamily development and utilities are available. In order to be considered as "immediate and direct" competition, the proposed projects must either be held by, or under contract to, a developer with known intention to move forward with a condominium or multifamily project. The proposed project summary in Table (7) combines the number of units planned for condominium development on several sites within the market area and presents this information to provide a composite picture of the potential additions to the market area.

# Table (7) Planned Condominium Projects

# Central Austin Market Area

Map #	Project Name	Location	Planned Units	Current Status
1	1306 West Ave.	1306 West Ave.	11	site plan filed
2	505 Congress Condos	505 Congress Avenue	200	closed, design work for mixed-use tower underway
3	721 Congress Ave	721 Congress Ave	16	project design underway; remodel permits approved
4	7th and Rio Grande	7th and Rio Grande	170	rezoning application approved; site plan filed
5	Block 21 (The "W")	310 W 2nd Street	196	closed, design for mixed-use tower underway
6	Block 51 (Ovation)	Sixth and Nueces	400	site plan filed; negotiating construction bid
7	Block 52	Fifth and San Antonio	500	planned
8	Brackenridge Tract	Lake Austin Blvd.	1000	feasibility
9	East Avenue (Concordia)	IH-35	22	PUD amendment filed
10	Four Seasons Residential	San Jacinto & Cesar Chavez	166	redesigned; taking reservations
11	Gables Park Plaza (LIC)	901 W. Cesar Chavez	100	site plan filed
12	La Vista on Lavaca	17th and Lavaca	66	under construction/on hold
13	Lakeview at Waller Creek	SWC Cesar Chavez and Red River	201	planned
14	Lofts at Shoal Creek	NEC West Ave. and 6th St.	91	zoning approved, site plan filed
15	Mira Vista Condos	1010 W. 10th	8	site plan approved, filed for building permits
16	Pleiades	1603 Enfield	21	under construction/on hold; foreclosed; under contract
17	Presidio at Judges Hill	803 West MLK Street	44	under construction
18	Seaholm	West Cesar Chavez	80	design work underway
19	Spring	550 Bowie St	246	under construction
20	The Austonian	200 Congress Ave	219	site plan approved, ground breaking date set
21	The Orsay	901-903 Neches St.	90	closed, preliminary design underway
22	The Verdance	3200 Grandview	16	under construction
23	Verandas del Mercado	3921 Medical Parkway	12	site plan filed; available
Total U	nits		3,875	

Source: Capitol Market Research, Developer and Broker Interviews, October 2008

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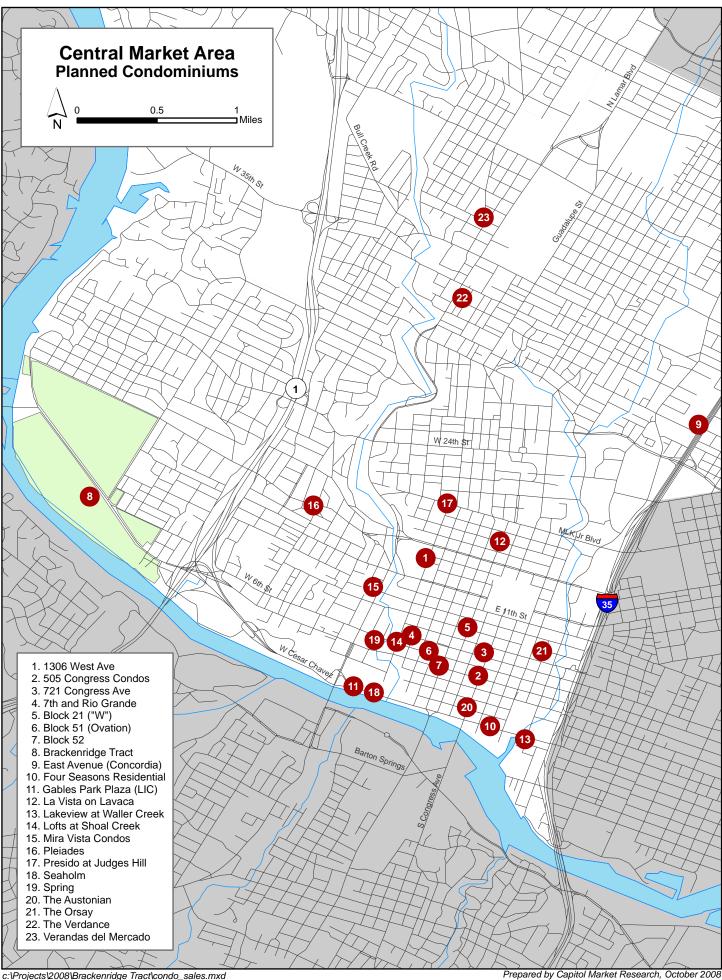


Table (8)
Planned Condominium Project Timing
Central Austin Market Area

Мар #	Project Name	Planned Units	2008	2009	2010	2011	2012	Future
1	1306 West Ave.	11			11			
2	505 Congress Condos	200						200
3	721 Congress Ave	16						16
4	7th and Rio Grande	170						170
5	Block 21 (The "W")	196			196			
6	Block 51 (Ovation)	400				400		
7	Block 52	500						500
8	Brackenridge Tract	1,000					200	800
9	East Avenue (Concordia)	22			22			
10	Four Seasons Residential	166		166				
11	Gables Park Plaza (LIC)	100						100
12	La Vista on Lavaca	66		66				
13	Lakeview at Waller Creek	201				201		
14	Lofts at Shoal Creek	91						91
15	Mira Vista Condos	8		8				
16	Pleiades	21		21				
17	Presidio at Judges Hill	44		44				
18	Seaholm	80						80
19	Spring	246		246				
20	The Austonian	219		219				
21	The Orsay	90						90
22	The Verdance	16		16				
23	Verandas del Mercado	12						12
Condon	ninium Units	3,875	0	786	229	601	200	2,059

Source: Capitol Market Research, Developer and Broker Interviews, October 2008

compsite.xls

# **Market Area and Subject Absorption Forecast**

It is estimated that the market area will show an annual demand for new condominium and townhome units from 2008 through 2012 of approximately 212 units, increasing to 266 units from 2013 through 2017, 337 units from 2018 through 2022 and 407 units from 2023 to 2027. The timing of the previously mentioned planned projects is shown in Table (6) on the previous page. Combining the current market conditions with the plans for new unit construction developed in the previous section, an absorption analysis for the market area and the subject project can be developed and is shown in Table (9) on the following page.

Table (9) **Brackenridge Tract Absorption Forecast**Central Market Area

Year	Condo/Townhome Demand	Units Added	Subject Units	Proportionate Market Share	Competitive Market Share	Average Market Share	Subject Absorption
2008	142	0	0				
2009	207	786	0				
2010	239	229	0				
2011	236	601	0				
2012	235	200	100	42.6%	57.0%	49.8%	100
2013	239	239	0				
2014	247	247	0				
2015	256	256	130	50.8%	51.0%	50.9%	130
2016	289	289	0				
2017	300	300	0				
2018	312	312	150	48.1%	48.0%	48.0%	150
2019	324	324	0				
2020	337	337	0				
2021	350	350	175	50.0%	50.0%	50.0%	175
2022	363	363	0				
2023	377	377	0				
2024	391	391	195	49.9%	50.0%	49.9%	195
2025	406	406	0				
2026	422	422	0				
2027	438	438	0				
Total		6,867	750				750

Prepared by: Capitol Market Research, November 2008

CompSites.xls

this absorption forecast assumes that the units purchased are on land that is owned "fee simple"





TO: Coope	r Robertson & Partners	FROM: DATE: PROJECT: PROJECT NO.:	Kimberly Doerle 03.04.2009 UT Brackenridge Tract A08220
SUBJECT:	Hotel Precedents	F0	

#### REMARKS:

We have collected information and images for a variety of hotels which are valid to study on the Brackenridge Tract. The scope, scale, and location of the following hotels range from very dense urban one acre city block footprints in downtown Austin and San Diego, to a 17 acre spa resort setting on Lake Austin, to 284 acres of minimally disturbed landscape along the California coast. These examples each contain an applicable component that is relevant to our site along the lakefront of Lady Bird Lake.

Information on the following hotels is organized from smallest footprint to largest footprint:

- Alden Hotel Houston, TX
- Hotel San Jose Austin, TX
- Ivy Hotel San Diego, CA
- Hotel ZaZa Dallas, TX
- Rosewood Mansion on Turtle Creek Dallas, TX
- Rosewood Crescent Court Dallas, TX
- Lake Austin Spa Austin, TX
- The Houstonian Houston, TX
- Hyatt Newporter- Newport Beach, CA
- Ventana Inn and Spa Big Sur, CA

Information on these properties is found on the following pages.

Hotel: Alden Hotel Houston, TX Location: Area: 1 acre

Key count: 97 guest rooms including nine suites Special Amenities: Fine dinning with signature bar.
Urban hotel located in CBD in downtown Houston.







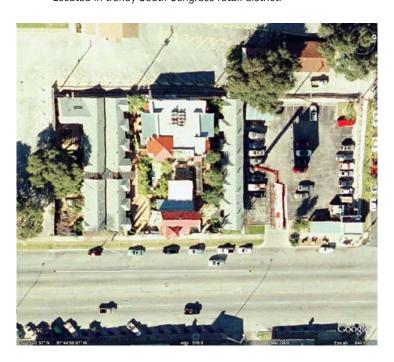


Photos courtesy of Google Earth and <a href="https://www.aldenhotels.com">www.aldenhotels.com</a>

Hotel: Hotel San Jose Location: Austin, TX 1.15 acres Area: 40 guest rooms Key count:

Special Amenities:

Small pool within exterior lounge space. Located in trendy South Congress retail district.









Photos courtesy of Google Earth and TBG Partners

Hotel: Ivy Hotel
Location: San Diego, CA
Area: 1.7 acres

Key count: 159 guest rooms including 14 deluxe suites and 3 specialty suites

Special Amenities: Fine dinning restaurants and bars with a roof top pool terrace providing city and

waterfront views from an urban location.









Hotel: Hotel ZaZa Location: Dallas, TX Area: 1.8 acres

Key count: 153 guest rooms including 17 concept suites and 7 magnificent suites

Special Amenities: Luxury Za Spa

Fine dinning restaurant with outdoor pool and night club.

Located in the heart of trendy Uptown Dallas.









Hotel: Rosewood Mansion on Turtle Creek

Location: Dallas, TX Area: 4.6 acres

Key count: 143 guest rooms including 16 suites.

Outdoor pool and lush gardens, fine dinning, health and fitness studio, message services, adjacent to large Public Park and public jogging trails. Special Amenities:

Located in Dallas' most fashionable neighborhood.

Voted top US hotel by Zagat and top US hotel restaurant by Travel and Leisure.









Photos courtesy of Google Earth and www.mansiononturtlecreek.com

Hotel: Rosewood Crescent Court

Location: Dallas, TX Area: Dallas, TX

Key count: 191 guest rooms including 29 one and two story suites ranging from 770-3,035 square

eet.

Special Amenities: Luxury spa, fine dinning, outdoor pool, business lounge, and signature restaurants at

ground floor.

Located in trendy Uptown Dallas District.









Hotel: Lake Austin Spa Location: Austin, TX 17 acres Area: Key count: 40 guest rooms

Special Amenities:

Luxury Spa with 30 indoor and outdoor treatment rooms.

Outdoor resort pool, walking trails and Yoga deck on Lake Austin.









Photos courtesy of Google Earth and www.lakeaustin.com

Hotel: The Houstonian Hotel

Location: Houston, TX Area: Houston TX

Key count: 288 guest rooms

Special Amenities: Garden environment hotel with three resort pools, tennis, gymnasium, Luxury spa, fitness

center, and on site boxing ring.

Located on wooded park like setting in the heart of downtown Houston.









Photos courtesy of Google Earth and <a href="https://www.houstonian.com">www.houstonian.com</a>

Hotel: Hyatt Newporter Location: Newport Beach, CA

Area: 26 acres

Key count: 403 guest rooms

Special Amenities: Situated in the heart of Newport Beach one mile from the coast the hotel offers, spa amenities, three outdoor pools, 16 tennis courts, a nine hole golf course, and on site bike

rentals.









Photos courtesy of Google Earth and <a href="https://www.newportbeach.hyatt.com">www.newportbeach.hyatt.com</a>

Hotel: Ventana Inn and Spa

Location: Big Sur, CA Area: 243 acres

Key count: 60 units consisting of a combination of guest rooms, suites, and freestanding houses

each containing fireplaces and private balconies with stunning views all nestled in the

heavily wooded landscape.

Special Amenities: Luxory Allegria Spa and Cielo fine dinning restaurant.

Natural setting in the heart of Big Sur with spectacular ocean views.









Photos courtesy of Google Earth and www.ventanainn.com

APPENDIX E. Communication & Public Input

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E1. INVI	COMMUNICATION TOOLS: DATA SHEET HANDOUT, DOOR-HAN TATION	IGER, POSTCARD



# THE UNIVERSITY OF TEXAS: BRACKENRIDGE TRACT

# INVITATION to a LISTENING SESSION

Please join the
Cooper Robertson & Partners
TEAM
on behalf of
The Board of Regents of
The University of Texas System
to talk about the
master planning project for the
BRACKENRIDGE TRACT

# Wednesday, June 25<sup>th</sup> 6:30 P.M.

LCRA Hancock Building Boardroom 3700 Lake Austin Blvd.





# THE BRACKENRIDGE TRACT CONCEPTUAL MASTER PLANNING TEAM for The University of Texas System Board of Regents invites you to an Update Session on the project status.

Wednesday, May 20, 2009 9:30 am -11:30 am or 6:30 pm - 8:30 pm\*

LCRA Redbud Center

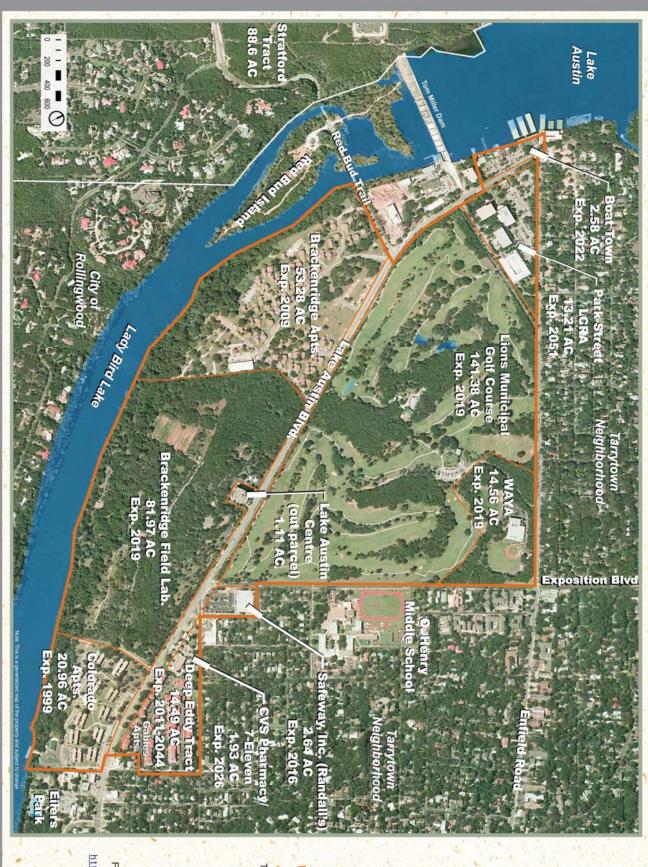
3601 Lake Austin Boulevard

\* Morning and evening sessions are identical. Duplicate presentations due to size of venue.

For more information, please visit the updated website: http://www.utbracktract.com

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AUSTIN, TEXAS 78763-5459

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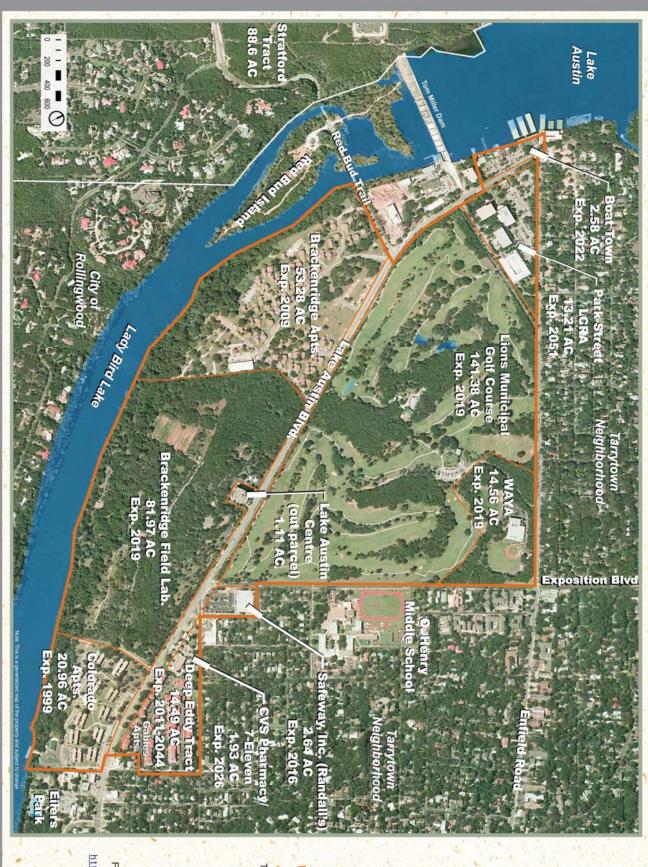
UPCOMING EVENTS

Information Session
Tuesday, August 12, 2008
6:30 p.m.
LCRA Boardroom
Hancock Building

Week Long Workshop November 3-7, 2008 LCRA Colorado Room

For additional information please visit http://www.utbracktract.com

contact Beverly Silas at bsilas@cdandp.com 512.533.9100 ext.13





THE
UNIVERSITY
OF
TEXAS
SYSTEM

BRACKENRIDGE TRACT

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contact Beverly Silas at bsilas@cdandp.com 512.533.9100 ext.13

#### **Week Long Workshop Invitation (print and eblast versions)**

The Brackenridge Tract Conceptual Master Planning Team For The University of Texas System Board of Regents invites you to the Brackenridge Tract Weeklong Workshop

#### **PUBLIC PRESENTATIONS**

All of the public presentations will be held at the LCRA Hancock Building, Board Room, 3700 Lake Austin Boulevard.

#### **Kick-off Presentation**

An introduction of the workshop, presentation of site analyses, and Q&A

Monday, November 3

evening 6:30 to 9:00 p.m.

For those who are unable to attend this session, the Kick-off Presentation will be posted on the Brackenridge Tract website the following day.

#### **Public Work Sessions**

An exploration of alternative development scenarios will be offered in two sessions. We invite you to attend one of these sessions.

Wednesday, November 5

morning 9:30 a.m. to 12:00 p.m. evening 6:30 to 9:00 p.m.

Prior registration is required for table seating where scenarios will be explored. Table seating is limited to 120 people. All are welcome as observers.

#### **Closing Presentation**

Summary of workshop input

Friday, November 7

evening 6:30 to 9:00 p.m.

#### **GALLERY HOURS**

A collection of background and progress drawings will be displayed at the entrance of the LCRA Colorado Room (former Lakeview Café), 3700 Lake Austin Boulevard, throughout the Weeklong Workshop. Visitors may view these drawings during posted gallery hours and will be greeted by a Brackenridge Tract Conceptual Master Plan team member.

Monday, November 3

evening 4:30 to 6:00 p.m.

Tuesday, November 4

midday 11:30 a.m. to 1:00 p.m.

evening 4:30 to 7:30 p.m.

Wednesday, November 5

morning 7:30 to 9:00 a.m.

evening 4:30 to 6:00 p.m.

Thursday, November 6

midday11:30 a.m. to 1:00 p.m.

evening 4:30 to 7:30 p.m.

Friday, November 7

morning 7:30 to 9:00 a.m.

For more information and registration, please visit <a href="http://www.utbracktract.com">http://www.utbracktract.com</a> or call 512-533-9100 ext. 11.

#### 1. Who do you think owns the Brackenridge Tract?

The City of Austin

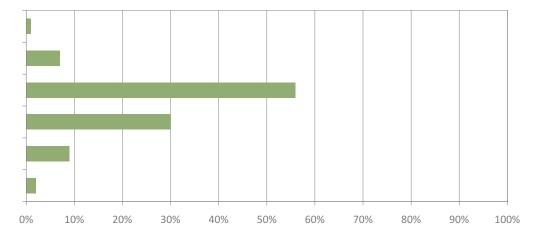
The State of Texas

The Board of Regents of The University of Texas System

The University of Texas at Austin and several private owners

A combination of all of the above

None of the above



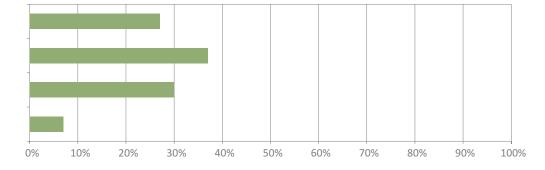
### 2. How much land do you think is currently in the Brackenridge Tract?

Over 500 acres

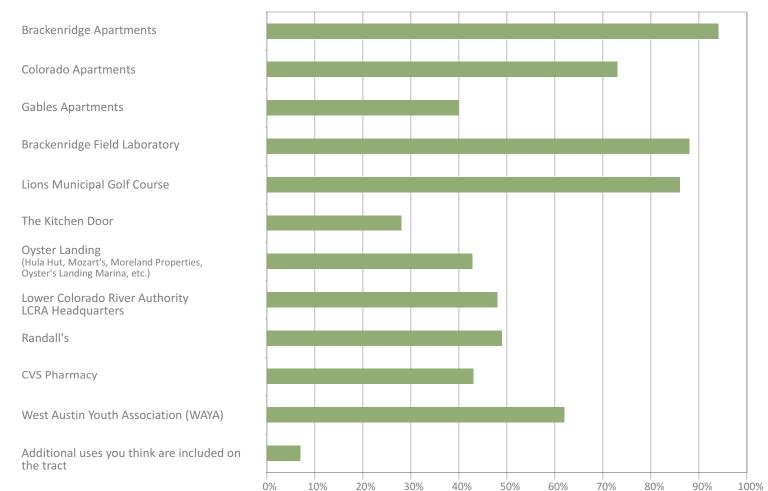
350 to 500 acres

100 to 349 acres

Less than 100 acres

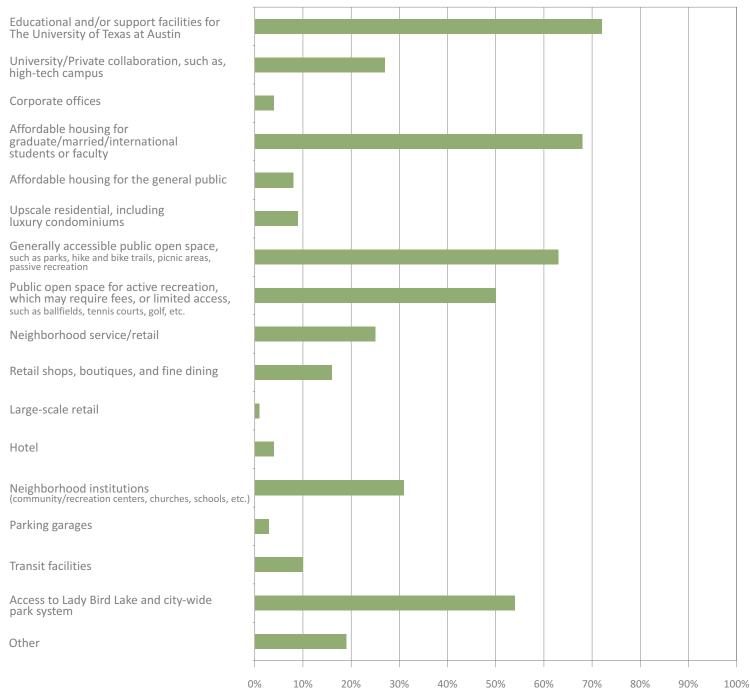


#### 3. Which of the following uses do you think are on the Brackenridge Tract?



"Additional uses you think are included on the tract" included: Deep Eddy Tract contains 7-11 gables pastry shope etc...but I'm not sure about the Kitchen Door, I've never heard of that but most likely it's a store in the Deep Eddy Tract Student Housing (may be listed above, but I'm not familiar with the names of the apartments); Graduate Student Apartments (I do not know what the names are); office building on Lake Austin Blvd. between lab and Brack apartments; Golf Course; I have no idea; student housing; I know graduate student housing is there which is extremely important.; lake austin blvd, botanical reserach area, 2-3 other student housing units but I can not recall their names; maybe Randall's and CVS; Lake Austin Building that houses the Ray Marshall Center; What if I don't know or don't care that others are on the tract? How does that affect the survey?; Texas Rowing Boathouse; Probably more; UT Rowing; UT student housing; Texas Rowing Boathouse; recreation; an elementary school (Matthews?); Affordable housing for UT graduate & international students; housing for married students and grad students; immigrant families who can't afford to live elsewhere seveneleven groc.; Hogg Foundation, 7-Eleven; graduate student apartments; Distance Education Center; Texas Row Center; school; O' Henry Middle School; The tract is an investment it is only going up in value - UT should keep it. It is like an option for future development of the university. Whoever is in charge - don't blow it!; UT rowing center Hogg Foundation building; UT Rowing Club; Rudbud Island; Thousands of young children have grown up to live healthy, moral and fulfilling lives. They have been molded and shaped through the work and missions of WAYA. I know I am a different person today than I could of been because of my 10 years because of WAYA, and the positive influence that it has had and continues to have on ALL of the children in West Austin.; community garden; hike/bike trail; UT research lab and married student housing; Hogg Foundation; retail strip center and convenience store; boat access; Stratford Tract; UT Rowing Center; 7-11 Store; Stratford Lane trracts that were previously sold; 7-11 store; 7-11 store; UT Lake Austin Center, 7 Eleven; Streets; The Tract included acreage south of the river that was sold previously by the Board of Regents and developed as private residences. In question 1 above I would answer that the University of Texas owns what is left of the tract; I suppose that the right answer to the question is intended to be the "The Board of Regents."; 7-11 store; All the wonderful wildlife that will be destroyed and "repurposed" if further developed; Not sure; Already too much development.; graduate student housing; Chevron Station; other UT office building W of Field Lab, other retail student living quarters; road right-of-way/ parking for LCRA and Hula Hut; Stratford, 7-11; Weed growth. Fenced off lake access.; golf course; I thought this was University graduate student apartments, a lab, and some empty land - was surprised to find out recently it also included Lions golf course.; not certain.

4. Which of the following do you believe should be part of the long-term future of the Brackenridge Tract?



"Other" responses included: (Note-several answers were mentioned multiple times, however we only combined those that were exactly the same.) West Austin Youth Association (WAYA) was listed 41 times; Lion's Municipal Golf Course was listed 9 times; I do not support MUNY golf-course, or any other exclusionary, water-hogging land use.; With 141 acres devoted to a golf course, why not leave the remaining 204 acres for the families and businesses that are already there? It's imperative that students with children are given a decent chance at graduating, taking away the only affordable housing in Austin for them seems ridiculous. Develop the golf course. Does the planning committee really feel the needs of over 500 lower income student families are less important than a few rich white men and women (okay maybe a minority or two but you get my drift) who golf there? I'd say develop the golf course, and use some of the funds to repair (NOT renovate) the student housing, and leave the remaining businesses there to continue making Austin unique. Austin has developed TOO MUCH already! Developers don't seem to be happy uintil we look like Houston, they DO NOT need the University of Texas helping them!!; go to the highest lease bidders and use \$ for UT Austin; biological research, especially field research;

#### "Other" responses continued:

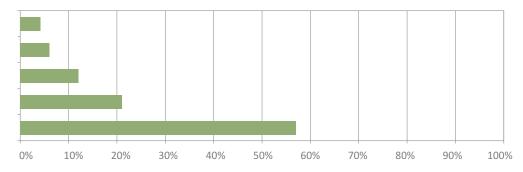
Whatever supports the University of TX; Biological Research Facility; if it's near the lake then rowing facilities; ecological research; Housing for any student; Outreach activities to involve the public in UT research; undeveloped land; Biological research space; Water sports facility; Biological Field Station; Use as originally intended by Col. Brackenridge. Would you sell the football stadium?; Brackenridge Field Laboratory; a ut watersports/rowing facility; Research facility for UT professors and students; this plot of land is a gem for the city (and UT). UT should be good community stewards + should be able to make some money, serve the educational/Austin community; I am okay with MIXED USE (Retail, UT Resources) but the primarly purpose must be to DIRECTLY serve the needs of students; Why do you not let me say what I think the \*primary\* purpose should be; then let me select others based on additional space? The way it's phrased, it seems like if I select "support facility" and "student housing", you might construe this as my allowing the two possibilities. Not so -- student housing comes first, period. I support nothing if not student housing first; if there's more space after ensuring housing, then put support facilities. It seems your survey is just vaguely worded enough that any answer with multiple selections can be construed as supporting more strongly than intended that participant's least important selection. Please explain to me why I'm wrong; RecSports facilities, both for general use and for Texas Crew, the UT club rowing team; UT Outdoor Student Leadership Development Facility; ample space on the tract should be preserved for research and for affordable student housing. I do not want to see expensive commercial/retail endeavors fill the tract.; Affordable housing for graduate & international students; whatever helps students best combat tuition increases; The campus should not landlock itself. That would be a HUGE mistake; UT & public use ONLY; per original donor's intention; Investment and development option for UT; UT apartment; Both domestic and intl students desperately need affordable housing if UT-Austin expects to maintain its record, reptuation for scholarly advancement.; Brack Field Lab, this is important to science and UT Austin; the field laboratory should keep its land, and should not be further encroached upon; keep loin's golf course; I support deriving the greatest benefit for UT-Austin from the land--keeping some form of grad student housing on site if at all possible. Things such as the golf course must go, unless the university is remunerated at a rate commensurate with the land's value. I support developing the land in a way that benefits the city, but UT should not be expected to dole out huge subsidies to the city. The cost of maintaining a particlar ambiance in that part of Austin should not be footed by the university and its students.; Brackenridge Field laboratory; In general things which promote education at UT Austin or which foster good relationships between UT and the community; WAYA, Lions; Retirement village for aging Longhorns; vertical mixed use; Field laboratory and greenbelt; biological and ecological research; WAYA & Lions Golf Course; Trail extension from town lake; high rise development which might save the golf course; retain lions muni at all costs.; greenbelt left undeveloped along the shore facing Redbud Island; WEST AUSTIN YOUTH ASSOCIATON, LIONS PUBLIC GOLF; buffering for the existing single family residential houses, such as with parks, open space or other new single family homes; golf course, community/recreation center; A large, dense mixed used project subject to site constrictions such as parking, setbacks, etc.; golf course; WAYA. PLEASE KEEP WAYA.; I oppose any additional building on this site.; A comprehensive plan that interconnects all (core) City Parks and Greenways via hike and bike trails and other creative pedestrian connections; Biology Lab; the things that are currently there; Sr Housing, i.e., Tx Ex & Affordable Sr Housing; No congestion-building development -- respect the neighborhood and its residents!; affordable neighborhood dining; Lions Municipal Golf Course; Brackenridge Field Lab; Botanical field labroratory; LEAVE THE GREEN BELT ALONG THE RIVER. Gardens; Rental housing for graduate/married/intern'l students; West Austin has socioeconmic diversity due to the graduate housing location and limiting the use of this land to reflect only a small portion of citizens in the Austin area by building more high-end retail prohibits keeping Austin Affordable and land for public use in the central area.; single family housing and park/open space areas to buffer existing neighborhood; do not develop lyons golf course nor waya fields; I am a graduate of UT Austin and support university efforts AND preservation of neighborhood amenities. Married student housing could easily move to a more cost effective location and make way for residential and retail while preserving our green spaces.; Include Bauer House in development!; Entertainment venues such as live music or theatre; Get rid of the ugly UT apartments. Currently its a big waste of valuable land.; WAYA is a must. Any other venue that would benefit the entire neighborhood-- such as restaurants. More housing (arpartments or other) should not be considered. It just creates more traffic and does not benefit the existing neighborhood. There's plenty of new housing nearby in the downtown area.; public golf course; West Austin Youth Assn.----CRITICAL; WAYA and expansion of WAYA facilities; single family residential ("upscale" not required); WAYA and MUNY; baseball, soccer and football fields; WAYA and Lion Municipal Golf Course; Keep the Lady Bird Lake shore/flood zone a wilderness area--it is educational as such. Honor the donor's will: educational purposes for students on the land.; Austin's Central Park- and keep the field laboratory. Could also have UT horticultural research and training facilities, semi-open to the public and enhancing the open, park-like setting. Might even have UT open-air sport facilities (ball parks, soccer, tennis, etc.). Anything which enhances the park-like setting and is semi-open to the public.; Maintaining AFFORDABLE Lions Golf Course for public use; Public Golf Course; for the neighborhood service/retail - keep it at the level it is - NO WALMART or high rise condos PLEASE!!!; greenbelt designation; Existing Field Lab, Golf Course, and WAYA; We need neighborhood gathering places, NOT high-end traffic-building retail and multi-family housing in order to have the most benefit to our neighborhood and allow Austinites more access to Lake Austin for

"Other" responses continued:

enjoyment (although not a bunch of party-going marina-dwellers like Hula Hut); Waterfront Development District; restaurants along lady bird lake only; Keep Muni!!!; PLEASE - leave the research lab - and no more condos or retail. UT is a first-class university because of our fabulous graduate and doctoral programs. Give those students some place to live, so we can all benefit from their enrollment at UT. (Married students often have spouses who participate in our educational systems, health care providers, high tech businesses and more.); keep the golf course as is; Extend Lance Armstrong Bikeway from Deep Eddy across Brack Tract to Hula Hut vicinity; Golf course!!; Lion's Municipal Golf Course, WAYA – specifically; The golf course property should be sold to the city, purchased with money contributed by the public and private benefactors, to create a great city park like New York City's Central Park --- a park worthy of the state's capital. Any other rapidly growing, prosperous and progressive city in the country would jump (one would hope) at the chance to acquire such a magnificently beautiful piece of land for a great city park. New York's Central Park has been called "the most important work of American art of the 19th century." Never again will the Austin have such a chance to acquire so large and beautiful a piece of land near the center of the city. Mr. Brackenridge gave the University this property as the new and beautiful site of the state university. Since the University managed to ignore this condition of the gift, even selling some of the tract south of the river for private residential development, one might guess that Mr. Brackenridge would be gratified to have some part his gift used for the general benefit of the people of Austin and of the state for what would be a wonderful public park, perhaps named for him as San Antonio's much less beautiful park is.; extending the hike and bike trail would be of huge value to the residents; New smallish bungalow developments that reflect the historic nature of this neighborhood & encompass the tenets of new urbanism.; This list does not include a golf course, where question 3 does. I and my family believe the tract should include a golf course.; retirement communityless impact on neighborhood; would like very much to preserve the quality of life this tract provides and not add to density/congestion already being experienced in the area due to the major arteries going both east/west and north/south--thank you; No new development. Keep the Field Lab.; keep the golf course; Historic Lions Municipal Golf Course; Green space!; Save Muny!!; PLEASE LEAVE IT AS IS - SELL THIS LAND TO THE CITY OR DO A SWAP FOR ANOTHER PIECE OF LAND. THIS IS A WONDERFUL PART OF AUSTIN. JUST LEAVE IT AS IS! WAYA OFFERS CHILDREN AROUND AUSTIN FAMILY VALUES AND MEMORIES THAT BUILD AN IMPORTANT FOUNDATION FOR THE NEXT GENERATION OF AUSTINITES.; all current uses plus extension of hike-and-bike trail along the lake to Red Bud Isle; I think you trade the golf course for COA land based on apprasied values; WAYA & Lions Municipal Golf Course should stay; Golf course; low rise luxury residential; I think you should keep the golf course; A real TOD with vertical mixed-use.; Leave WAYA and the course alone...it has been in the public domain for 84 years and should remain so; parking deck for commuters to use the UT shuttle; KEEP LIONS MUNICIPAL GOLF COURSE; municipal golf course; It's private property and the decision of the current owners; Lions Golf Course/1 reason MCC choose austin-#golf courses- Don't be shorted sighted- A new governor will give more funds to the college system; bike lane along Lake Austin blvd./ I think it is important to keep LCRA there as long as possible, but to use it for educational or housing purposes for UT if necessary/ definitely not for profit, private development; Any above as long as the work is high quality, impervious cover is limited, significant green/open spaces are maintained, development/leases are staggered, and most importantly, much more public lake/trail access is allowed for/created/maintained (will increase land value, greatly enhace Austin trail system, and improve community/city support).; This is an opportunity for another urban revitalization / anti-sprawl planned community, the likes of Mueller or the Triangle, but hopefully, better. While I think it should include lakefront access and other public resources, we're just down the street from Deep Eddy, the Zilker footbridge, and the western loop of the hike and bike trail, so I don't think that has to be a priority. Instead, offering downtown-style retail and dining with luxury townhome, patio home and single family lots (no condos -- way too many of those already), would help draw more progressive, high spending families into the urban core and help revitalize area businesses and cultural institutions. These progressive urbanites vote with their wallets, and if the community were designed right to attract them (environmental -- but also great architecture, layout and amenities), it could help improve west austin from the ground up.; Public golf courses the way it is nowP.

#### 5. How long have you lived in Austin?

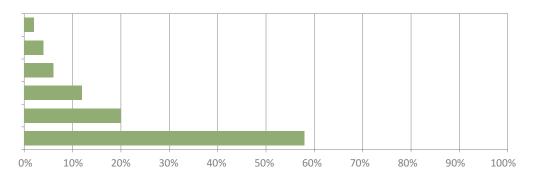
50+ Years 40-49 Years 30-39 Years 20-29 Years Other



"Other" responses included: less than 1 year was listed twice; 1 year was listed thirty-six times; 2 years was listed sixty-four times; 3 years was listed sixty-one times; 3.5 years was listed three times; 4 years was listed thirty-nine times; 5 years was listed fifty-eight times; 6 years was listed twenty-four times; 7 years was listed twenty-two times; 8 years was listed seventeen times; 9 years was listed nine times; less than 10 years was listed twice; 10 years was listed thirty times; 11 years was listed thirteen times; 12 years was listed sixteen times; 13 years was listed twelve times; 14 years was listed twelve times; 15 was listed twenty-nine times; 16 years was listed nine times; 17 years was listed ten times; 18 years was listed six times; 19 years was listed three times; 1-2 yr.; 10-15 yrs.; 2.5 years; 4-5 yrs; 5+ years; a visitor; about 1 yr.; about 4 yrs.; fewer than 5 years; 6 years and own a home in Tarrytown; 4 years for grad school + 4 years when I was growing up; 19 years plus 4 years in early '80s; less than 20 years; Husband lived in Austin for 83 years and wife has lived in Austin from Dessau since 1941; I grew up in Northwest Hills, attended UT Austin, and now live in West Lake Hills, just off Red Bud from the areas in question; I've lived here for 28+ years and have been an active community volunteer. I chose this neighborhood in order to raise my children with like-minded, civic-oriented families. I love this area!; just moved here last July '07; moving to Austin in august; Question # 6 will not let you type in zip. 78703; since 1990 have lived in Austin; Student; Student for 4 years; UT Student.

#### 6. What is your current zip code and how long have you lived there?

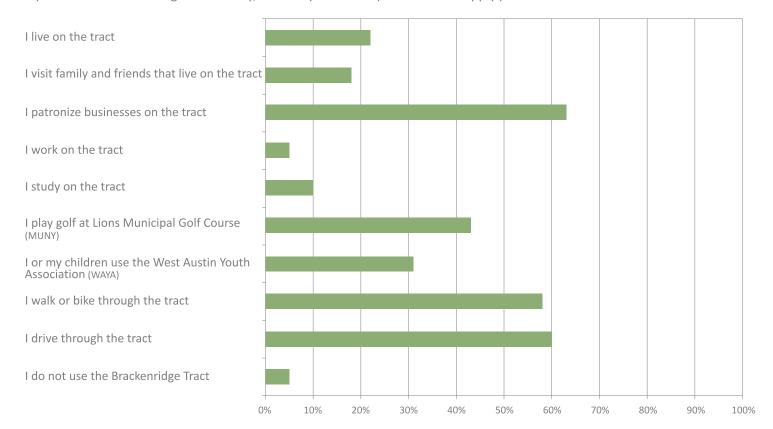
Over 50 Years
40-50 Years
30-39 Years
20-29 Years
10-19 Years
Less than 10 Years



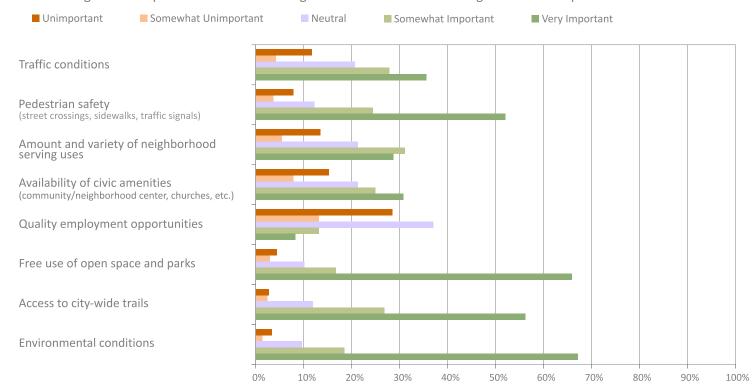
"Zip Codes" included: 78703 listed 631 times; 78746 listed 50 times; 78705 listed 31 times; 78751 listed 21 times; 78704 listed 18 times; 78731 listed 15 times; 78745 listed 12 times; 78759 listed 10 times; 78722 listed 9 times; 78741 listed 8 times; 78749 listed 8 times; 78701 listed 7 times; 78702 listed 5 times; 78757 listed 5 times; 78723 listed 4 times; 78660 listed 3 times; 78712 listed 3 times; 78728 listed 3 times; 78729 listed 3 times; 78748 listed 3 times; 78752 listed 3 times; 78756 listed 3 times; 78756 listed 2 times; 78736 listed 2 times; 78736 listed 2 times; 78736 listed 2 times; 78738; 78739; 78744; 78750; 78758; 94720.

# August 2008 412 Participants

1. If you use the Brackenridge Tract today, how do you use it? (Check all that apply.)

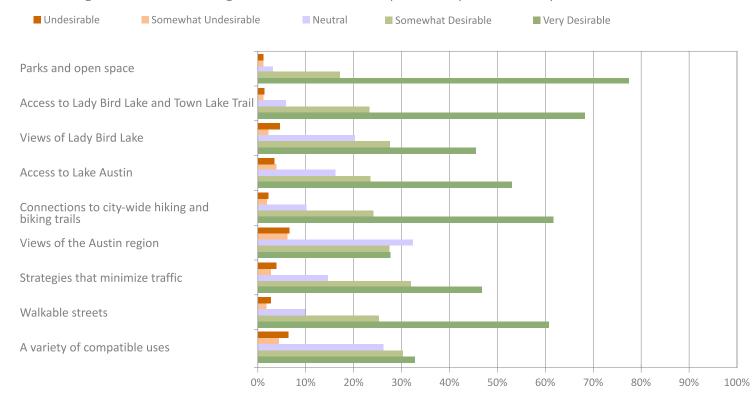


2. To what degree is it important that the following conditions in the Brackenridge Tract area improve?

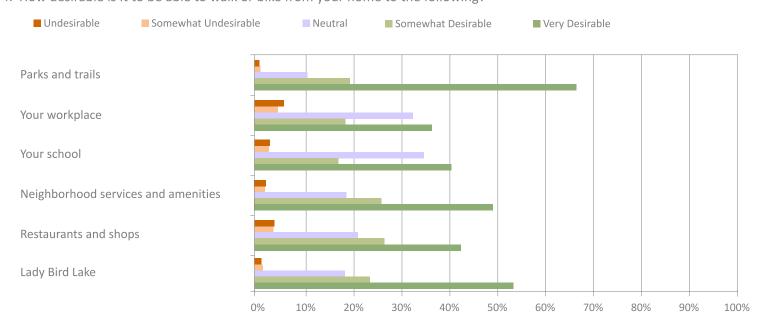


# August 2008 412 Participants

#### 3. To what degree would the following features be desirable components of your community?

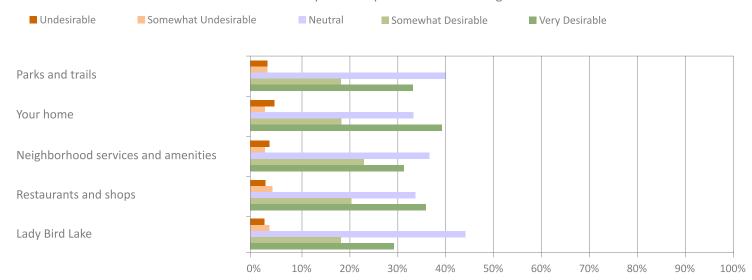


#### 4. How desirable is it to be able to walk or bike from your home to the following?

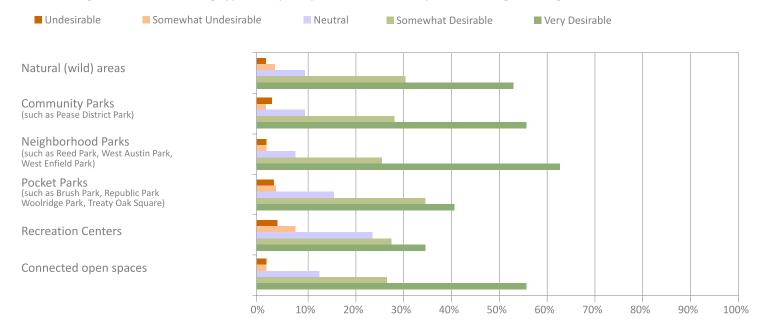


# August 2008 412 Participants

5. How desirable is it to be able to walk or bike from your workplace to the following?

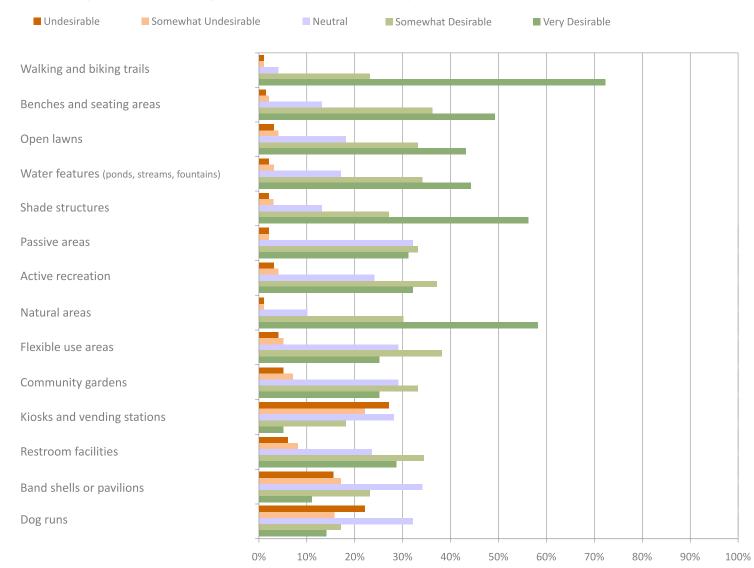


6. To what degree are the following types of open space desirable components of a great neighborhood?

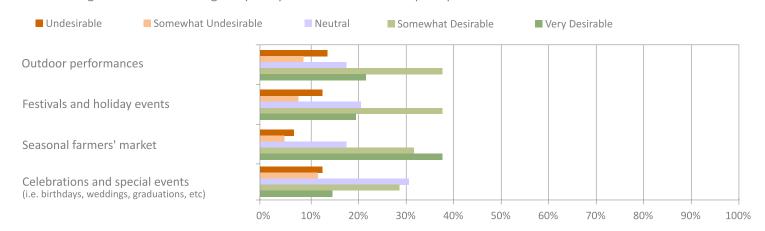


# August 2008 412 Participants

#### 7. To what degree are the following elements desirable in an open space?



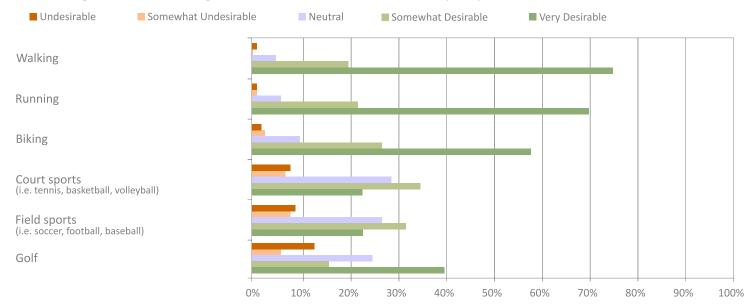
#### 8. To what degree are the following temporary uses desirable in an open space?



# August 2008

## 412 Participants

9. To what degree are the following active recreation uses desirable in an open space?



10. For those who use MUNY, do you ever use MUNY in any of the following ways? (Check all that apply.)

Playing golf

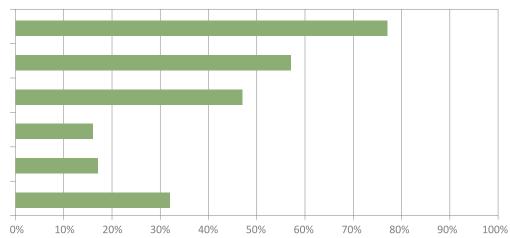
Practice putting and driving without playing golf

Taking walks or running

Walking a dog

Passive activities (i.e. reading a book)

Stargazing at night



11. For those who use play golf, how often do you play MUNY? (Please select the closest option to your usage.)

One or more times per week

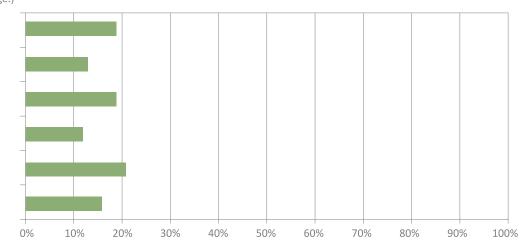
Once every two weeks

Once a month

Six times per year

Less than six times per year

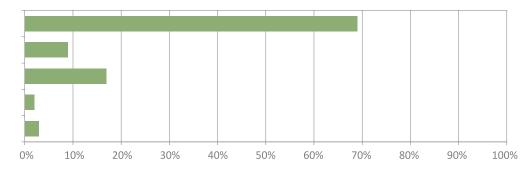
Almost never



## August 2008 412 Participants

# 12. On average, how many holes do you complete each time you play MUNY? (Please select the closest option to your usage.)





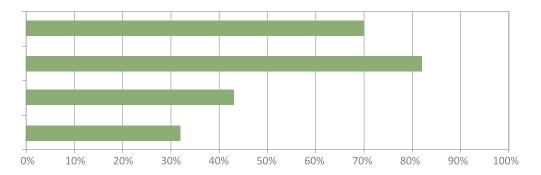
#### 13. Why do you use MUNY? (Check all that apply.)

Cost

Proximity to where I live

Course features

Other



"Other" responses included: great mix and diversity of people playing; community environment; proximity to work was mentioned five times; historic legacy of the course; good location to walk and stargaze; safe place for my children; it's history and it has been there forever; unique location, proximity to lake, downtown; Availability; Been playing here for over 50 years; Close to work; It's public and open to me; A great number of my friends play there; It is a beautiful OLD course with full grown trees; Connection to community and neighborhood; UT students should not have to subsidize the cost of green fees for West Austin golfers. Get rid of MUNY or make some money off of it; Surrounded by nature, little development; Not a Country Club; pave it, put in more housing; Historic; child friendly; it is the best golf course in central Texas and has a storied history that makes its preservation essential. Any redevelopment that does not preserve MUNY in its current form is unacceptable; History of MUNY and Austin; tradition, history; do not play golf; it is safe for kids; Proximity to Hula Hut; It's a neighborhood treasure; it's historical; History and tradition - played there since I was a child; it allows well behaved teenagers to play; small town community feel; they know folks who play; historical and sentimental value; Great historic tract; beautiful, historical facility that is an integral part of our neighborhood; tournaments hosted there; It's a short classic course that is fun to play. It never gets old; Friends want to play; history of the facility; Personal history and attachment to the course; History of the place, I love MUNY; Iconic Austin lifestyle and proximity; It's a publicly-owned, historic 18-hole golf course; I get invited to games/tournaments there; Great crowd; History; friendly people to play with; helpful staff; history of the course; like Hogan's hole; relatively easy to get a tee time; walk able; other seniors play there; great place to meet neighbors; It's a historic area that I love & want left as is; Public course, natural untouched beauty; It's where friends choose to play, so sometimes I play there; It's important to support organizations that are available to the general public at a reasonable price. We can't afford exclusive clubs too pricey for the average middle class family (e.g. "Westwood"); The history and it's a special part of the town I grew up in and love; don't use MUNY was mentioned six times; Amazing trees; truly is one of the remaining jewels of Austin; Nice course; I don't use it. Why is this answer required?? Bad survey design; Like the diversity of people it attracts; enjoy green space; many friends DO play golf; Lifetime friends & neighbors get together to play; Don't play golf was mentioned twice; my children play golf there; I don't, but you require an answer; Austin beauty; Classic Old Courses; Open space that is accessible to the community; It's a part of the Austin that I grew up in. It's my home course; when you play Muny, you feel you are sharing with a very special and historical tradition of this very special city. In addition, it is a beautiful course and I am a member of private clubs which have some of the most beautiful courses in Texas and some of the courses, in the U.S.; Muny is a great course, close to most Austenite, reasonable cost, and an overall great course. If it isn't broke, don't fix it. Thanks; it's the most walk able 18-hole course in Austin. Most others are designed with carts in mind; Historical site; serenity of area; no housing on course, etc; That the facility & staff offer so much to the community; Love Muny, been playing for 35 years; central location and a great challenge to play; Great place to meet friends for golf in a beautiful and effective use of green space; Muny is convenient to everywhere I want to go after golf; challenging w/out being offensively difficult; beautiful course; its draw is hard to put into words; it's part of Austin that grows on you and golfers fall in love with it; I do not play golf - I do appreciate the green space.

# August 2008

# 412 Participants

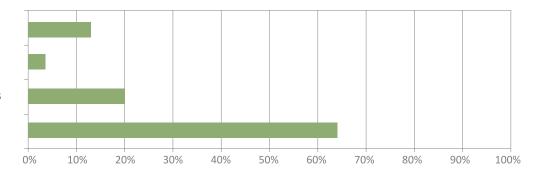
#### 14. Do you play at other golf courses?

Yes, at other public courses

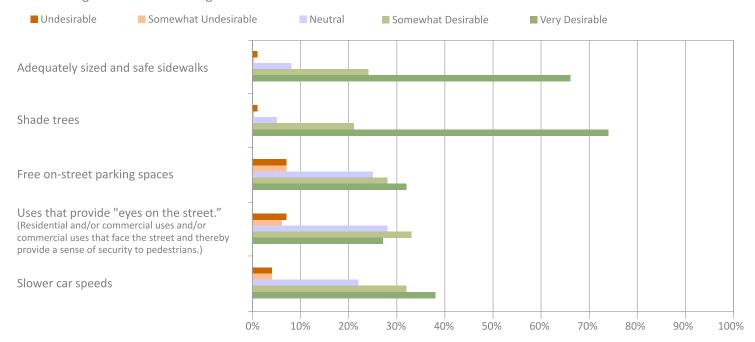
Yes, at other private courses

Yes, at other public and private courses

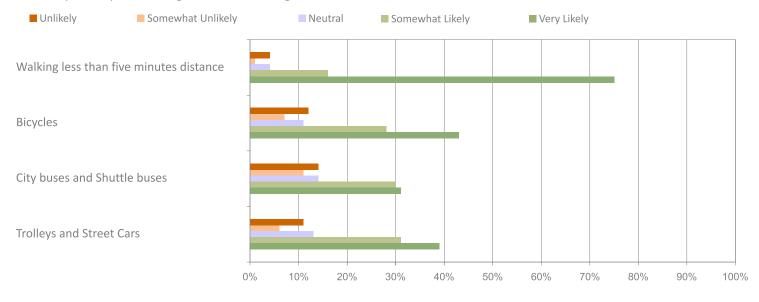
No



#### 15. To what degree are the following elements desirable features of streets?

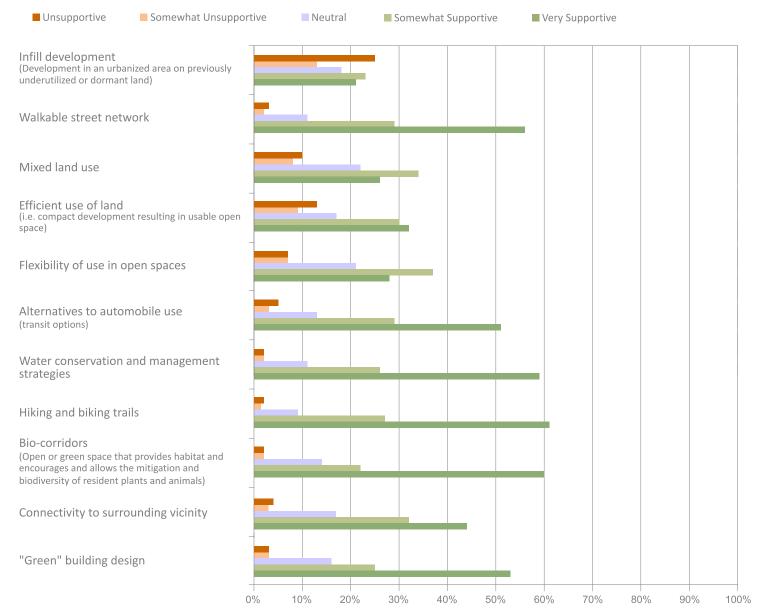


#### 16. How likely would you be willing to use the following alternatives to the automobile?



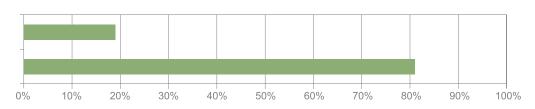
# August 2008 412 Participants

#### 17. To what degree do you believe the following elements support sustainable growth?



#### 18. Did you attend the Brackenridge Tract Listening Session at LCRA headquarters on June 25?





August 2008 412 Participants

#### 19. In which zip code do you live?

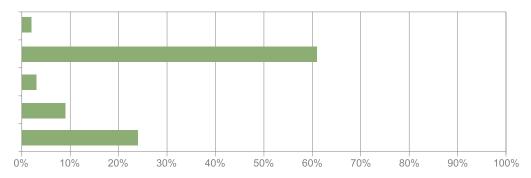
78701

78703

78705

78746

Other

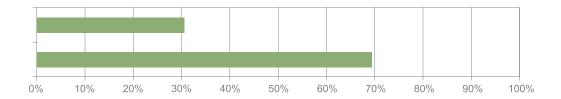


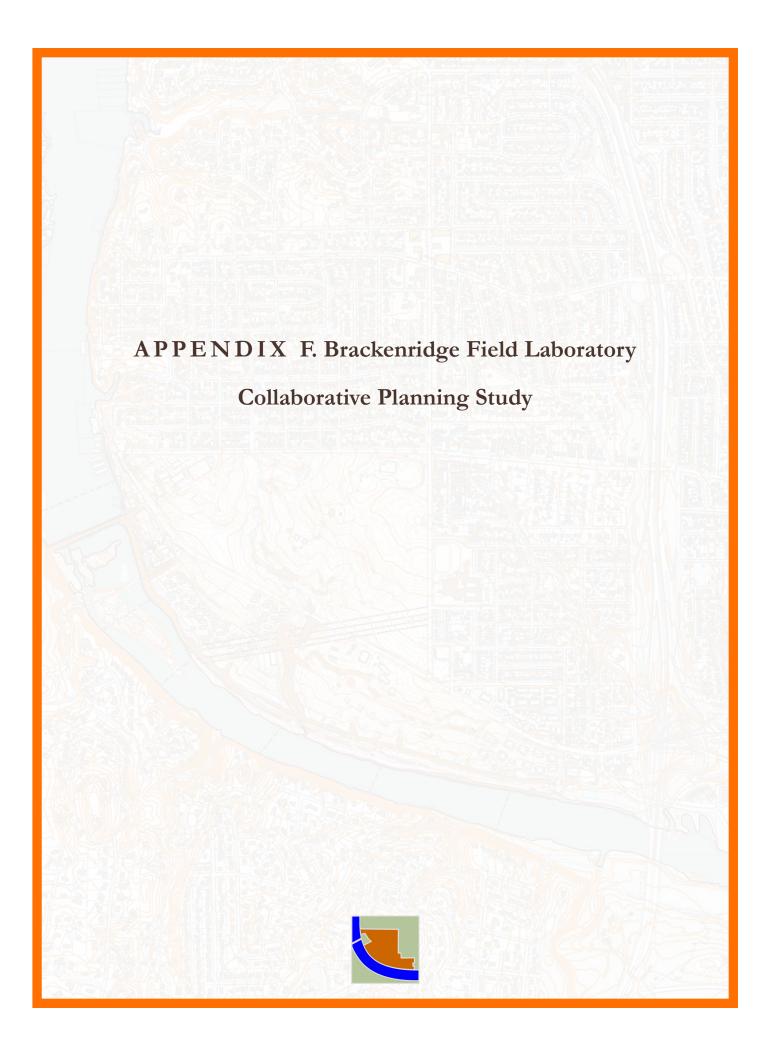
"Other" responses included: 78704 listed eighteen times; 78731 listed twelve times; 78748 listed five times; 78751 listed five times; 78756 listed five times; 78759 listed five times; 78745 listed four times; 78722 listed three times; 78723 listed three times; 78727 listed twice; 78757 listed twice; 78741 listed twice; 78753 listed twice; 78702 listed twice; 78744; 78750; 78754; 78758; 78717; 78721; 78730; 78733; 78734; 78736; 78738; 78739; 78752; 78610; 78620; 78660; 78664; 78945; 78947; 78704- Save the BFL; 78704-Barton Hills; 78751 but grew up in 78746; I work in 78705; In the first question you should have "I live near the tract"; Question #1 needs to include I live near the tract.

#### 20. Did you lease or own your home?

Lease

Own





F1. HISTORIC AND CURRENT BFL RESEARCH Source: UT College of Natural Sciences	

#### Brackenridge Field Laboratory

#### Historic Landmark Research

#### Evolution and Behavior

- I. Animals spend a great deal of time and energy attracting partners and future mates, but it wasn't until William Code's study of crickets at BFL that scientists gained a better understanding of the true costs of attraction. Cade showed that male crickets, chirping away to attract females, are vulnerable to a parasitic fly that orients to the calling male. Once the fly finds its target, it deposits its larvae on the cricket and the immature flies eat and kill the cricket. Code's study was published in the journal Science in 1975, and scientists influenced by his work still visit BFL to study the cricket-fly interaction. New hearing aid designs have been inspired by the fly's auditory mechanism. Cade is currently president of Lethbridge University in Canada.
- 2. Throughout the animal kingdom, females choose males to mate with based on certain traits. Think peacock tails and deer antlers. But the evo-lution of these characteristics is not as simple to explain as one might think. For example, William Wagner showed that males in a species of swordtail fish are pygmies, the result of a genetic change. The females of the species, however, still prefer large males, despite the fact that they never encounter the more imposing males. Wagner's was one of the first studies to show how male traits and female preferences for traits can be decoupled during evolution. He published his research in Science in 1987, and is now an associate professor at the University of Nebraska.
- 3. Sometimes attracting a mate is just about put-ting on a good show. In a paper published in Science in 1994, Ingo Schlupp and Cathy Marler showed that males of sailfin molly fish strut their stuff with females of a different species, the Amazon molly, even though the Amazon molly is asexual (and not interested in the males' advances). But the sailfin males' showmanship makes them more attractive to their own females, who watch the males' dalliances. This research was an early, critical contribution to the field of mate-choice copying, which has even found its way into studies of human mating behavior. Marler is a professor at the University of Wisconsin-Madison and Schlupp is an associate professor at the University of Oklahoma.

4. Graduate student Nancy Burley's study of mate choice in pigeons was one of the first to successfully test major predictions of sexual selection theory. Published in PNAS in 1977.this work initi-ated a prominent career in evolutionary animal behavior. Burley is currently a Professor at University of California Irvine. Undergraduate Nancy Moran got her first taste of research when helping Burley with her studies at BFL. Moran is now professor at the University of Arizona and a member of the National Academy of Sciences. She is famous for her research on the genomics of aphids, a major crop pest.

#### Ecology and Environment

- 5 The ecological interactions among animals, plants and their environments are extraordinarily complex. The webs connecting all living things are difficult to decipher, and this is particularly challenging when one species only indirectly affects another (as opposed to, say, when one species just eats another). In the 1970'S, graduate student Don Feener demonstrated one of the first clear instances of indirect ecological effects, studying fly parasites of one of BFL's ant species. He showed that the flies could cause the ants to be less competitive with other ant species. Feener's research, published in the journal Science in 1981, has inspired a large body of ecological research and later stimulated research at EFL on the biological control of the imported fire ant with parasitic flies. For example, graduate student Natasha Mehdiabadi demonstrated at BFL that harassment by phorid flies may reduce fire ant colony food intake by 50 percent. Feener is now a professor at the University of Utah.
- 6. Paper wasps are common annoyances to most, taking up residence under house eaves. But they are also rich fodder for studying the evolution of sociality in all animals, and how relatedness amongst individuals plays out on the ecological stage. As a graduate student at BFL, loan Strussmann found that both workers and queen paper wasps made satellite nests away from the main nest. Other workers freely joined the queen satellites, but only joined the satellites established by other workers when their mother (the original queen) had been replaced on the main nest. So, the workers chose a satellite nest based on their relatedness to the founder. This test of kin selection theory propelled Strassmann to a prominent career in social

- evolution. She is now Wiess Professor and Department Chair of Ecology and Evolutionary Biology at Rice University.
- '7. Greg Sword's discovery of a color changing grass-hopper at BFL helped solve an ancient mystery about one of the world's most notorious agricultural pests, the desert locust of Africa and the Middle East, whose Biblical plagues have been well documented. Sword showed that some grasshoppers and locusts can become brightly colored as a signal that they are toxic and should be avoided by their predators. His work at BFL was published in *Nature* and set the stage for a series of studies that have made major contributions to understanding locust ecology around the world. Sword has since held positions at Oxford University and the U.S. Department of Agriculture. He is currently a tenured senior lecturer at the University of Sydney in Australia.
- 8. In a series of papers published in the journals *Biology of Invasions* and *Ecology* from 2006 to 2009, Rob Plowes and Ed Lebrun have made fundamental advances in invasion biology by showing why some environments resist invasion by the red imported fire ant. They also used phorid flies introduced to control fire ants as a model system to understand invasion dynamics and to dissect the mechanisms by which one introduced phorid can replace another.
- 9 Vegetables, fruits and grains have long been hybridized to improve their taste and performance, but plant hybrids also occur naturally in the wild. In the first study of its kind in a non-crop plant, Ken Whitney; an assistant professor at Rice University, is looking at the impact of plant hybridization on the evolution of wild sunflowers. He measures differences in evolution between hybrid and non-hybrid populations across central and eastern Texas, including populations at BFL. Whitney's work, published in American Naturalist in 2006, has demonstrated that natural hybridization can increase evolutionary novelty and the transfer of adaptive traits between species.
- 10. In 1983, undergraduate Bill Van Eimerin began a detailed study of the imported fire ant invasion at BFL. His work was continued by postdoctoral researcher Sanford Porter and Professor Larry Gilbert, and has become a landmark study of competitive replacement of native species by a non-native invader. The study led to further research on the ecological impact of fire ant invasion (published in the journal Ecology) and detailed work on how fire ants are controlled in their native Brazilian habitat. BFL scientists also first demonstrated how

fire ant colonies with multiple queens reproduce by budding. BFL fire ant scientists can now be found directing USDA efforts in fire ant biocontrol in Gainesville, Florida and serving as professor of entomology at North Carolina State University.

#### Learning and Memory

- 11. Hummingbirds are always on the go and can't waste time looking for their next sip of nectar. They are so small and their metabolic rate so high, that they can literally starve to death if they do not find food quickly. But all organisms must balance the need for food with the cost of foraging. Mary George conducted one of the first studies show-ing how quickly hummingbirds learn the location of their food or that the location has changed. By manipulating nectar in hummingbird flowers and monitoring the birds' responses, she showed the importance of learning and plasticity in foraging. This work was published in Auk in 1980.
- 12. Honey bees are one of the most important crop pollinators in the world, not to mention purveyors of honey. They are also some of the smartest insects on the planet. It is well known that foraging bees communicate the location and quality of food to their hive mates by "dancing" an elaborate method of whole-body information transfer. In a series of papers, the first of which was published in 1985 in Biological Bulletin, Darrell Moore showed that bees use the time of day in learning flower locations. They learn more quickly at certain times of day and can also learn to forage at certain patches of flowers at particular times of day. This knowledge is invaluable to beekeepers looking to train bees to pollinate critical crops, and to neuro-scientists studying cycles of brain activity, learning and memory.

# Brackenridge Field Laboratory Current Research

"The folks at BFL have been poking at fire ant mounds, pondering parasitic flies and enduring thousands of painful stings to bring us where we are in the fight against the red imported fire ant."

#### 1. Project

#### Red imported fire ant

Lead researcher Larry Gilbert

#### Fighting Fire with Flies

For over 30 years, the folks at Brackenridge Field Laboratory (BFL) have been poking at fire ant mounds, pondering parasitic flies and enduring thousands of painful stings to bring us where we are in the fight against the red imported fire ant, a pest that's estimated to cost Texas alone \$1.2 billion annually.

One of the largest success stories in the 40-year history of BFL has been the discovery and introduction of parasitic phorid flies from South America used to naturally control the invasive ants.

"The first attempt to initiate naturalized popula-tions of exotic phorids anywhere in the world took place at BFL in late 1995," says Larry Gilbert, pro-fessor of integrative biology and director of BFL. The flies can now be found attacking red imported fire ants in over five million acres across Texas.

Scientists at BFL are using new remote sensing and geographic information system (GIS) technology to better understand the colonization of fire ants and the spread of the phorid flies.

Gilbert and his colleagues have also trained ranchers from South Texas to infest fire ant mounds with the flies themselves, which led to the first successful introduction of a phorid fly in South Texas and inspired a new approach to estab-lishing the flies south of San Antonio.

Learn more about BFL's role as an epicenter for fire ant research at <a href="http://ens.utexas.eduleommunieations">http://ens.utexas.eduleommunieations</a> 12006Io9Ifireontonniv.osp

#### 2. Project

#### The invasive Asian clam

Lead Researcher David Hillis

#### Digging for Clams

Ever since invasive Asian clams slipped into the invasive American waters in the 1920s, they've been wreak-ing havoc. The small clams pack together, clogging cooling lines of power plants and polluting the water when they die off in massive numbers.

Dr. David Hillis and his students are using the tools of ecology and molecular genetics to better understand these clams, of which two species are abundant in Town Lake. By digging deep into the clams' genetic systems, they hope to learn what makes them such successful invaders. "We want to know what about their genetic systems allows them to replace native spe-cies," says Hillis, professor of integrative biology.

"Understanding the biology of these species is critical to developing methods to control them," says Hillis, "and controlling these pest species has direct practical implications for humans. They displace other wildlife, create power-plant outages and degrade the drinking water supply."

Using BFL's aquatic rearing facilities and natural habitats along Town Lake, they are also figuring out how the introduction of Asian clams affects our aquatic ecosystems.

In Central Texas, we know that our water resources are precious, but Hillis' studies here at The University of Texas at Austin are applicable throughout the country, where Asian clams can be found fouling waters in over 35 states.

#### 3. Project

Drought resistance in plants

Lead researcher Tom Juenger

Surviving Drought

One of the things that attracted Tom Juenger, assistant professor of integrative biology, to the study of plants is the obvious but evolutionarily interesting fact that they can't move. "They land somewhere, and they have to just deal with it," he says. "From an ecological perspective, and an evolutionary perspective, they have real challenges."

In his research at BFL, Juenger studies the genetic strategies plants have evolved to cope with environmental stresses that they can't, being rooted, walk or flyaway from. In particular, he looks at how plants have adapted to drought, which is a particularly significant matter in a rain-scarce state like Texas but is also the single biggest limitation to crop productivity and agriculture worldwide.

At the experimental gardens and new research greenhouse at BFL, Juenger works primarily with *Arabidopsis thaliaria*, a species plant geneticists use because, like the mouse and the fruit fly, its genome has been fully sequenced. It also has a relatively short life cycle and scientists have been accumulating knowledge about it for decades.

Juenger and his students subject their plants to various environmental stresses to determine and, analyze the genetics mechanisms the plants use to survive. "Stress a plant out," he says, "and whole sets of genes can turn on and turn off."

As their knowledge of drought adaptation deepens, says Juenger, "there's great potential for improving plant productivity."

#### 4. Project

#### Biological affects of global warming

Lead researcher Camille Parmesan

#### Changing Climate, Changing World

Camille Parmesan keeps her eyes on the world. She may be studying butterflies over relatively small areas in Texas, California or Europe, but she is ever mindful of the effects global warming and climate change may be having on these local places and on the plants and animals that inhabit them. In her pioneering research, she's shown us how some species of butterflies have shifted their ranges geographically in response to global warming.

At BFL, Parmesan and her students continue their investigations into how climate change and global warming might be affecting our ecosystems. Doctoral candidate John Matthews is looking at dragonflies that spend their young days as larvae in small ponds. He's found their life cycles are dependent on both local temperature and precipitation, variables which can change with the climate and impact the many species dependent on them.

This research is part of a larger effort to deter-mine how global warming is altering the biology of organisms that live in small ponds, which are essential habitats for migratory birds and beneficial aquatic animals like frogs, insects and turtles. In Texas, these ponds also serve as important watering holes for cattle.

"If climate change is altering these ponds, then the areas that are suitable for ranching may well be changing," says Parmesan. "Moreover, many aquatic species have important effects on humans." She points out that dragonflies, which are vora-cious predators of mosquito eggs, are important controls of mosquitoes.

#### 5. Project

#### Aquatic invaders

Lead researcher Mathew Leibold

#### Nature vs. Nature

When invasive species pillage a new ecosystem, taking advantage of the absence of their natural biological enemies to be fruitful and multiply, there's an obvious, intuitive response: Bring over their traditional enemies from the old country, and let nature take its course.

"Biocontrol [using other organisms to strategi-cally control pest species] by their enemies could be useful," says Mathew Leibold, a professor of integrative biology. "It could also be catastrophic if these organisms in turn affect native species in unpredicted ways."

Leibold, who's in the process of transferring his research to Texas from Michigan, plans to rely on the resources, and the proximity to campus, of BFL to study the complex interactions between invasive species, the water ecosystems they invade, and the natural enemies that already exist or might be introduced into the system.

Leibold will study and compare how the ecosys-tems of Town Lake have resisted or succumbed to the invasion of alien species, like the Asian clam, which have already established a beachhead there. He'll also use the facilities at BFL to construct artificial streams where the potential for biocon-trolcan be explored without further upsetting the balance of native ecosystems.

His research may ultimately be deployed not just to resist the spread of the specific species he's studying, but to develop more sophisticated mod-els for how to use nature to intervene in its own defense.

#### 6. Project

#### Fish behavioral ecology and biodiversity

Lead researcher Mike Ryan

#### Fishy Behavior

Mike Ryan, professor of integrative biology, is investigating a mysterious group of fish. Females of an all female species of Amazonian molly mate with males of the sailfin molly, a completely different species of fish. .As if that's not strange enough, the presence of the sailfin males' sperm only

triggers the development of the Amazonian females' eggs, but the females' eggs aren't fertil-ized. The males' genes are not passed on.

This curious mating system intrigues Ryan, who is studying them at BFL to see why male sailfins would waste their energy (and sperm) mating with the female Amazonian mollies.

This is but one example of Ryan's research on sexual selection, which he says is the most important force driving the evolution of biodiversity. Sexual selection occurs when members of one of the sexes, usually male, compete with each other to mate, or when members of one of the sexes, usually female, choose their mates based on certain traits. This can lead to the evolution of new traits, and sometimes, new species.

In another study at BFL, Ryan is looking at the sexual behavior of swordtail fish imported from streams in northeastern Mexico. In the swordtails, females prefer to mate with large males, but there are also sneaky small males who force themselves on the females. It turns out that the difference in male size is due to only one gene. Ryan wants to know what is maintaining this diversity in male body types, to better understand why either the large or small males haven't won out over evolutionary time while the other has gone extinct.

#### 7. Project

#### Rapid species detection

Lead researcher David Hills

#### On the Fast Track

'What if there was a tool you could hold in your hand that would rapidly identify an organism based on its genes?

Could you quickly identify an agent used in a bioterrorist attack-or a new pathogen spreading rapidly through a population?

You bet, says David Hillis, professor of integrative biology. He and his colleagues are developing such a technology-an automated detection and identification system for any living organism known today; The technology is based on rapid, small-scale sequencing of target genes.

"We cannot understand how biological systems work without identifying the component species," says Hillis, "and current techniques for doing this are

too slow, too inefficient and too expensive. This project seeks to automate the process of species identification."

The well-known flora and fauna at BFL provide Hillis and his colleagues with the perfect field-testing site for this developing technology. There they can test the accuracy of their technology with organisms that are already known through traditional identification means.

Hillis says: "This research has the potential to greatly aid medical identification of pathogens, provide rapid identification of organisms used in used bioterrorism attacks, improve environmental monitoring to detect changes in species composition, and greatly aid in the basic discovery of new life forms."

#### 8. Project

#### Fish behavior and evolution

Lead researcher Molly Cummings

#### The Aquatic Life

In order to navigate through their watery world in search of food, mates and protection from predators, fish-the most diverse group of vertebrates - have evolved a number of defenses, body patterns, colors and behaviors.

Molly Cummings, assistant professor of integrative biology, is interested in what drives the evolution of this diversity. In a large part, she says it's related to sex.

"We want to understand the mechanisms of evolution, particularly how sexual selection drives diversification in animal morphology and behavior," says Cummings. Among a number of research projects, Cummings is looking at how environmental changes have shaped the visual sensitivity of small fish known as swordtails – how they have evolved to see their potential mates and predators and to respond to social stimuli.

The swordtails live and breed in the large cement stock tanks at BFL, which act as microcosms of the rivers in northeastern Mexico, the natural home of the swordtails. Swordtails have a number of interesting traits and are part of many research projects in integrative biology (see also "Fishy Behavior").

Cummings is also collaborating with Hans Hofmann, an assistant professor of integrative biology, to study the genes that switch on and off in the brains of female swordtails during social interactions, like choosing a mate.

Though it's clearly a driving force in evolution, Cummings says that sexual selection is trickier to test than natural selection, and scientists have only recently begun to be able to measure the process, directly impacts everyone."

#### 9. Project

#### Insect diversity and ecology

Lead researcher John Abbott

#### Dragonfly Master

Buzzing, crawling and swimming around BFL are easily over 2,000 species of insects, all of which are under the watchful eye of John Abbott and his students. Abbott, a dragonfly specialist, maintains the large research and reference insect collection at the laboratory and is involved in many studies of insects around BFL and Texas.

"Insects are part of everyone's life," says Abbott. "The information we learn from them directly impacts everyone."

Much of Abbott's efforts are directed toward outreach and public education, encouraging awareness of the insect world and furthering our understanding of the most dominant group of animals on the planet.

His recently published books, Dragonflies and Damselflies of Texas and the South-central United States and Odonata of Texas: Volume 1, and his Web site, <a href="www.odonatacentral.com">www.odonatacentral.com</a>. provide scientists and the public with information on this fascinating and important group of insects. "Dragonflies and damselflies are gaining tremendous popularity, and our work helps to fuel that," says Abbott.

Some of Abbott's research focuses on using ant and beetle species as indicators of ecological disturbance. Changes in insect densities and diversity can provide insights into important ecological disturbances, like pollution, that aren't readily apparent to the human eye.