

A Look at the Economic and Demographic Projections for the City of Denton

Prepared by:
Terry L. Clower, Ph.D.
Bernard L. Weinstein, Ph.D.

Center for Economic Development and Research
University of North Texas

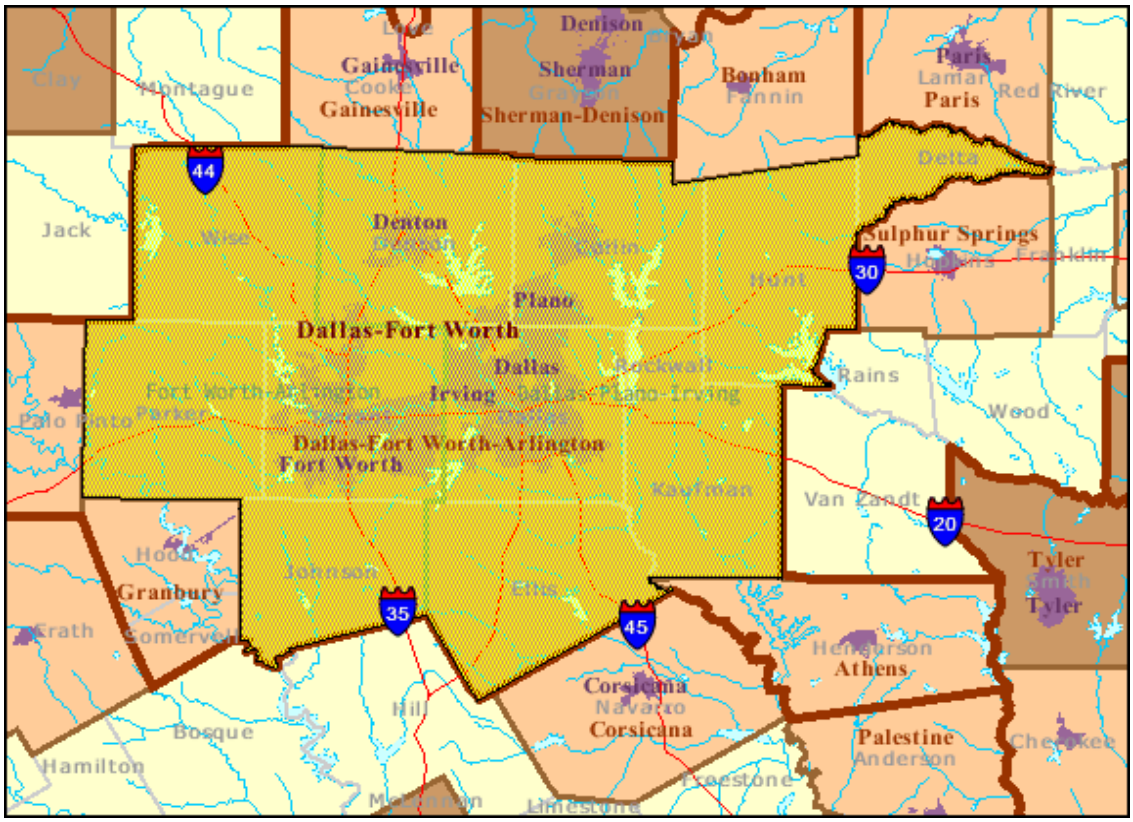
April 2008

Introduction

The City of Denton, located about 40 miles northwest of Dallas and 38 miles northeast from Fort Worth, occupies the apex of the north central Texas' "Golden Triangle". (See Figure 1.) The city was established in 1857 as the county seat for Denton County with 361 residents living on 100-acres of land. Today, more than 105,000 people reside in the city that covers almost 56,000 acres and is home to two public universities, Texas Woman's University and The University of North Texas – the third largest university in Texas. Denton has also attracted state-of-the-art hospitals, manufacturing companies, and new retail locations serving a rapidly growing north Denton County population.

The following report examines key demographic and economic characteristics of the City of Denton including current and future population growth trends and employment outlook. Particular attention is given to five focus industries including retail trade, medical services, aerospace/aviation, manufacturing, and research and development. The report also briefly updates the status of several of the largest property developments either underway, under construction, or in the planning stages that will impact near term growth trends in the City of Denton. However, national economic conditions and turmoil in capital markets are beginning to impact Denton's economy. Therefore, we begin with an overview of how the region and the city are faring in the face of current economic and market challenges.

Figure 1: **Dallas-Fort Worth MSA Map**



Source: U.S. Census Bureau

The State of the Economy

In all likelihood, the U.S. economy slipped into recession late last year. While it will be six to eight months before we know for sure that the economy is contracting, a spate of recent negative economic data suggests we're potentially in for a rough ride in 2008.

However, Denton and north Texas are better positioned than any other region of the country to ride out the recession of 2008. According to just-released Census data, in 2007 DFW added 162,000 new residents, more than any other area of the country. Since March 2005, the Metroplex has added over 150,000 jobs, and our unemployment rate is markedly lower than the nation's (Table 1).

Table 1

Total Employment and Unemployment Rate

	City of Denton	DFW	Houston	Austin	San Antonio	Texas
Mar 2005	50,162 (4.0%)	2,825,800 (5.2%)	2,455,400 (5.4%)	758,800 (4.4%)	847,400 (5.0%)	10,495,400 (5.4%)
Mar 2006	54,367 (3.9%)	2,913,500 (4.9%)	2,544,700 (5.1%)	784,400 (4.3%)	877,300 (4.7%)	10,797,500 (5.1%)
Mar 2007	57,874 (3.7%)	2,948,300 (4.1%)	2,591,700 (4.1%)	812,500 (3.5%)	883,700 (4.0%)	10,943,000 (4.2%)
Mar 2008	58,569 (3.6%)	2,982,800 (4.2%)	2,650,100 (4.1%)	829,300 (3.6%)	895,800 (3.9%)	11,101,700 (4.2%)
Change Mar 05-08	8,407	157,000	194,700	70,500	48,400	606,300

Source: Texas Workforce Commission

So far this year, the stock market has lost all of the gains from 2007 and then some. A rising unemployment rate, $100 oil, job losses for the past four months, plummeting home sales, the lowest level of consumer confidence in five years, and the collapse of the credit markets point to a less than robust near-term outlook, despite the recently-enacted Federal "stimulus package."

Table 2

Building Permits

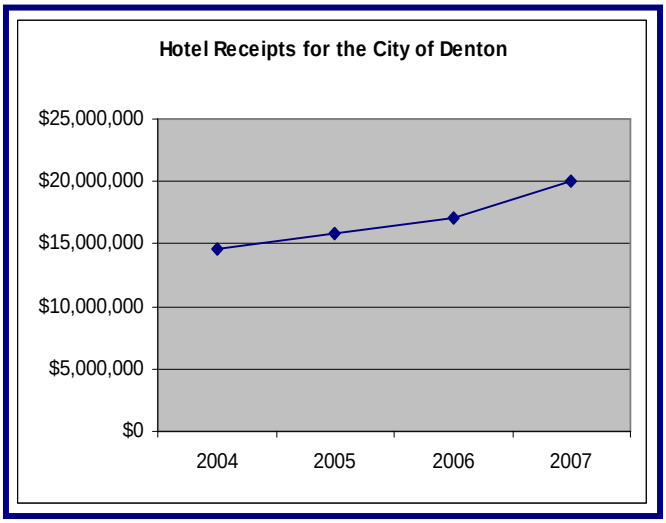
	Single-Family Homes			
	City of Denton	Dallas-Ft. Worth-Arlington	Texas	U.S.
YTD - Jan '08	36	1,340	6,740	47,500
YTD - Jan '07	66	2,510	9,840	79,600
YTD - % Change	-45.5%	-46.6%	-31.5%	-40.3%
Year Total 2006	1,207	43,590	162,750	1,378,200
	Multi-Family Homes			
	City of Denton	Dallas-Ft. Worth-Arlington	Texas	U.S.
YTD - Jan '08	0	2,490	4,930	28,400
YTD - Jan '07	0	1,520	3,430	32,800
YTD - % Change	N/A	63.8%	43.7%	-13.4%
Year Total 2006	0	12,920	53,890	460,700

Source: Housing Economics produced by the National Association of Home Builders, U.S. Census Bureau, City of Denton

On top of everything, there's the "sub-prime" mess, which nobody seems to fully understand-except that millions of these mortgages were packaged and sold around the globe. With a sluggish economy and falling home prices, many of these mortgage holders are upside down, and foreclosures both nationwide and in the Dallas-Fort Worth area are at their highest since the real estate collapse of the mid-1980s. Though the Metroplex hasn't experienced the housing price bubble now bursting on the east and west coasts, a huge amount of sub-prime lending has occurred locally-$7.5 billion in 2006 alone.

Importantly, the basic industries in north Texas remain healthy. Defense-related manufacturing continues to expand. The information technology sector has rebounded strongly from the "tech wreck" earlier in the decade. DFW's role as a major logistics center continues to increase in tandem with growing global exports from Texas. Though residential construction has fallen about 25 percent over the past year, this decline has been more than offset by new commercial, industrial, retail and public infrastructure projects.

Figure 2

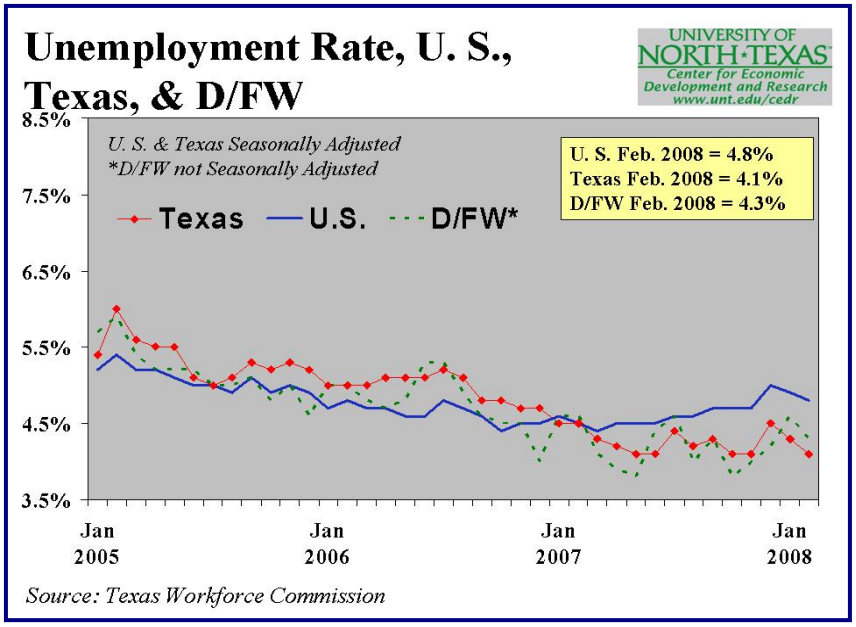


Source: Texas Comptroller

The hospitality industry is also on an uptick, with convention venues across the Metroplex reporting an increase in bookings. Though high energy prices have hit the wallets of local businesses and households, on balance they've been a plus for the region. Not only is the Metroplex home to dozens of oil and gas companies, the Barnett Shale is now the biggest natural gas play in the continental U.S., pumping billions of new dollars into the north Texas economy each year.

The Metroplex remains a magnet for in-migration, both from other states and from other countries. A growing population means more household formation and more spending which, in turn, generates more sales tax revenues for local governments and transit districts. What's more, the Dallas-Fort Worth region and Denton continue to witness business expansions and relocations, even as the national economy has slowed. For example, Jostens 13,000 foot expansion will be finished in June 2008, providing space for the relocation of the company's Massachusetts-based manufacturing operations. United Copper has also recently expanded with an 100,000 square foot addition.

Figure 3



Are we totally immune from the gathering storm? Of course not. But the economic momentum that has built up in recent years should help insulate Denton, from the worst of the recession's negative impacts.

Demographics and Education

Population Characteristics

Table 3

Population and Projections

	City of Denton	DFW MSA	State of Texas
2000	80,537	5,161,544	20,851,820
2007	105,550	6,075,400	23,407,629
2010	114,556	6,570,840	25,105,646
2015	138,119	7,482,956	27,581,188
2020	161,256	8,566,960	30,252,539
2030	213,813	11,397,571	36,332,880
2000-2030	133,276	6,236,027	15,481,060
Avg Annual %	3.3%	2.7%	1.9%

Sources: Census Bureau, Texas State Data Center, CEDR[1]

Fortunately, the City of Denton is located in one of the fastest-growing counties in the nation. According to the latest county population estimates from the Census Bureau, between 2000 and 2007 Denton County added 179,395 residents, an increase of 41.4 percent. Between 2006 and 2007 alone, Denton County grew by 26,000.

The City of Denton is becoming a more urban environment. The city ranked as the ninth fastest growing city over

[1] U.S. Census data, generally speaking, does not count students living in campus housing.

100,000 residents in the United States in 2006. The City of Denton is projected to grow to almost 214,000 by 2030 according to population projections by the Center for Economic Development and Research.

Median household income for City of Denton residents is on par with the State of Texas. Denton County continues recent trends of having household incomes substantially higher than the DFW region or the state. Household Income at the census tract level shows that Denton's periphery is comparatively high income compared to the city's traditional core area (see Figure 4).

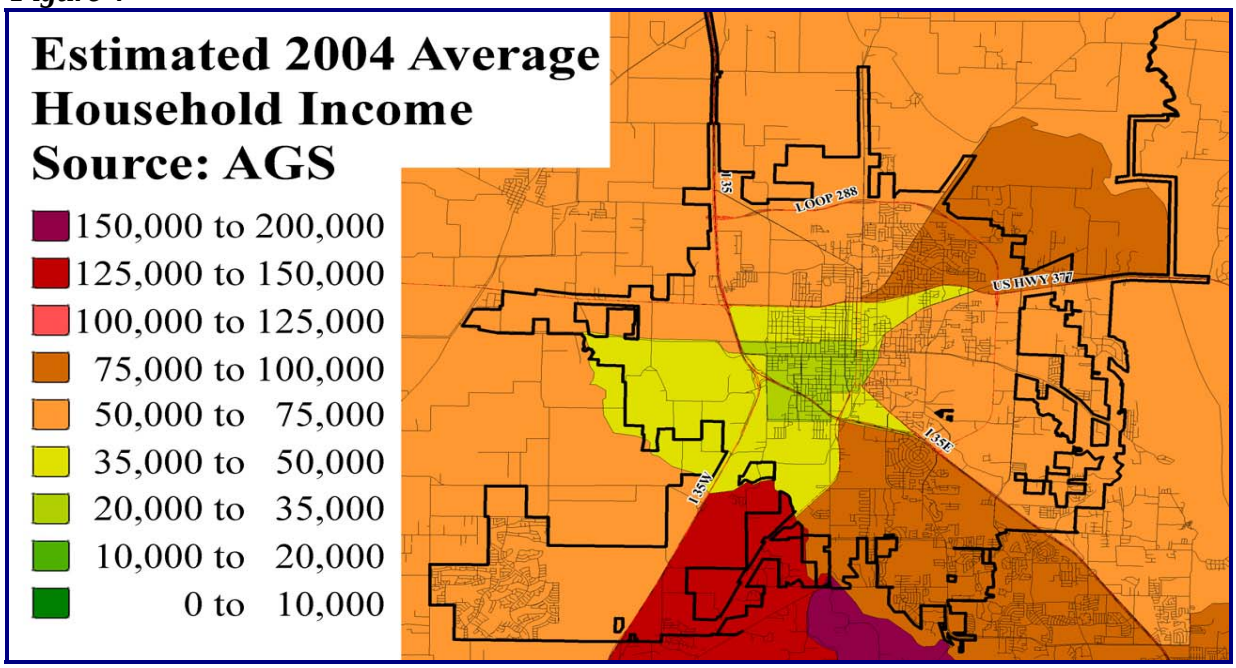
Table 4

Median Household Income (2006)	
City of Denton	$44,668
Denton County	$66,972
Dallas-Ft Worth MSA	$55,001
Texas	$44,922

Source: U.S. Census Bureau

While household income will likely continue to grow in Denton for the next several years, a rapidly increasing immigrant population in Texas is expected to push median annual household income in the state down $5,115 by the year 2030.[2] This trend points to the need to continue efforts to upgrade education attainment and skill sets among immigrant households with implications for long-term economic performance in the City of Denton.

Figure 4



[2] Projected household income change by the Texas Social Studies Supervisors Association.

The median age for City of Denton residents is 27.9 years – lower than the county median age of 32.2 years and the state's median age of 33.1 years. The City of Denton has two universities, and this helps explain the population's age inflating the percentage of residents in the 15 to 24 age group compared to the county and the state. Even so, the City of Denton's population aged 65 and over is still growing faster than overall population change. Between 2000 and 2006, the 65-and-over age cohort in Denton increased by almost 1,860 persons, a 29% increase.

Table 5

Age Profile

	City of Denton	Denton County	Texas
65 and over	8,224 (8.9%)	30,663 (5.3%)	2,329,442 (9.9%)
45 to 64	18,342 (19.7%)	132,003 (22.6%)	5,341,200 (22.7%)
25 to 44	26,736 (28.7%)	200,738 (34.4%)	6,881,052 (29.3%)
15 to 24	24,278 (26.1%)	89,625 (15.3%)	3,514,553 (14.9%)
Under 15	15,478 (16.6%)	131,209 (22.4%)	5,441,536 (23.2%)

Source: American Community Survey, U.S. Census Bureau 2006

Table 6

Racial and Ethnic Profile

	City of Denton	Denton County	Texas
Caucasian	62,240 (66.9%)	403,355 (69.0%)	11,309,011 (48.1%)
Hispanic	16,015 (17.2%)	94,106 (16.1%)	8,385,118 (35.7%)
African American	8,682 (9.3%)	40,275 (6.9%)	2,676,626 (11.4%)
Asian	3,761 (4.0%)	32,313 (5.5%)	775,110 (3.3%)
Native American	172 (0.2%)	2,129 (0.4%)	69,019 (0.3%)
Other	2,188 (2.4%)	12,060 (2.1%)	292,899 (1.2%)

Source: American Community Survey, U.S. Census Bureau 2006

The City of Denton has seen modest change in the racial and ethnic make up of the city since the 2000 census with the percentage of Hispanic residents rising from 16.4 percent to 17.2 percent by 2006. However, it is expected that the pace of racial and ethnic diversification will accelerate in coming years, though perhaps at a slower rate than the state. Projections from the Texas State Data Center estimate that under modest immigration assumptions, the Hispanic population in Texas will become the largest cohort sometime in the decade of the 2020s (see Table 7).

In 2006, the average household size in Texas was 2.81 and the state ranked fourth in the nation for average household size. The City of Denton had a slightly higher average household size than the state of 2.89.

Table 7

Texas Population Projections by Ethnicity
(Assuming Net Migration Equal to 1990-2000)

	2010	2020	2030	2040
Anglo	3,544,204 (50.7%)	3,884,139 (41.4%)	4,191,849 (32.7%)	4,457,038 (25.3%)
Black	921,864 (13.2%)	1,132,298 (12.1%)	1,354,271 (10.6%)	1,583,074 (9.0%)
Hispanic	2,106,803 (30.1%)	3,671,196 (39.1%)	6,121,931 (47.8%)	9,778,557 (55.6%)
Other	419,064 (6.0%)	699,852 (7.4%)	1,135,791 (8.9%)	1,778,329 (10.1%)
Total	6,991,935	9,387,485	12,803,842	17,596,998

Source: Texas State Data Center for the North Central Texas Council of Governments

Education

Denton's labor force is well-educated with about 40 percent of the population 25 years or older having at least an associate degree. This level of education attainment compares favorably with state averages (31 percent). Just as important, Denton County, which serves as a labor shed for many City of Denton employers, also has higher education attainment levels compared to statewide averages.

Table 8

Educational Attainment of Population 25 Years and Older

	City of Denton	Texas
No High School Diploma	6,444 (12.1%)	3,117,095 (21.4%)
High School Graduate	12,309 (23.1%)	3,964,551 (27.2%)
Some college, no degree	13,434 (25.2%)	2,969,594 (20.4%)
Associates Degree	3,517 (6.6%)	904,933 (6.2%)
Bachelors Degree	10,597 (19.9%)	2,424,828 (16.7%)
Graduate or Professional Degree	7,001 (13.1%)	1,170,693 (8.1%)

Source: American Community Survey, U.S. Census Bureau 2006

According to the North Central Texas Council of Governments, the Denton Independent School District is rated by the Texas Education Agency as being "academically acceptable." Denton ISD student performance on the SAT/ACT college admissions exams places the district ahead of many others in North Texas, while retaining opportunity for increased performance as Denton grows.

With industry and business evolving around Texas, school districts throughout the state are keeping pace, preparing their students for a workforce which demands young, skilled workers. About 72 percent of Texas high school students are involved in a career and technology class at some point in high school. Magnet schools – public schools that teach career-oriented curriculum – are one way to aid student learning.

Figure 5 *LaGrone Advanced Technology Center*



In August 2006, Denton ISD's LaGrone Advanced Technology Center opened to more than 1,200 students. This new educational institution affords students the opportunity to work with colleges and universities to prepare for life after high school. The complex offers a variety of specialized academies that reflect real-world working environments. Programs offered include Advanced Legal and Protective Services Academy, Advanced Medical/Applied Health Science Academy, Advanced Personal Services, Computer Technology, Pre-Engineering, and Visual Arts and Communication. Students attending the complex are able to work with local businesses while they earn anywhere from 13 to 18 hours of college credit.

Industry Employment Profiles

Overview

Over the past twenty years, the City of Denton has enjoyed more than its share of growth and business development. This includes what have become "traditional" Denton companies such as Peterbilt Motors, United Copper Industries, and Sally Beauty Company to more recent additions such as Presbyterian Hospital Denton, Anderson Merchandisers, and several new shopping venues such as Denton Crossing and Denton Station. This growth is poised to continue with major projects on the horizon like Fastenal, Rayzor Ranch, and Select Medical. Not only do companies see Denton as a place to do business, but in the case of Peterbilt and Sally Beauty, Denton is also seen as a prime location for national and international headquarters. Moreover, the expansion and upgrading of services at Denton Airport is creating potential new avenues of growth and development for the city.

Table 9

Employment Projections			
	City of Denton	Denton County	DFW
2000	58,581	152,818	3,158,200
2007	65,670	209,317	3,646,700
2010	68,457	228,191	3,897,000
2015	80,834	279,702	4,227,100
2020	89,171	323,082	4,658,700
2030	119,074	413,453	5,416,700
2000-2030	60,493	260,635	2,258,500
Avg %	2.4%	3.4%	1.8%

Source: North Central Texas Council of Governments and the Center for Economic Development and Research[33]

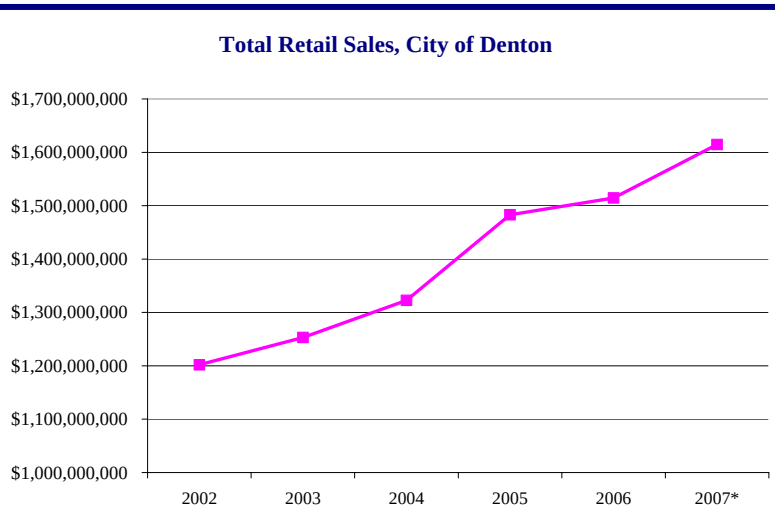
The Texas Workforce Commission projects that between now and 2014 the fastest-growing industries in the North Texas region will include support activities for oil and gas extraction, home health care services, employment services, offices of physicians, community care facilities for the elderly, colleges, universities and professional schools as well as elementary and secondary schools. Denton is certainly in the right place, with the right partner institutions and firms to capture a significant share of this growth.

The Denton Economic Development Partnership has identified five industries for special attention as the City prepares for the second decade of the 21st century including aerospace/aviation, medical/allied health services, manufacturing, retail trade, and research and development services. The Texas Workforce Commission sees each of these industries as sources of on-going economic growth and development with particular opportunities in health care services, aerospace/aviation, and research and development services.

Industry Profile: Retail Trade

Retail is a key employment sector in the City of Denton. Not only is Denton the corporate headquarters for Sally Beauty Supply, employing about 500 workers, but several retailers are major employers in the city including Wal-Mart, Super Target and James Wood Auto Park. In all, retail trade accounts for more than 2,000 jobs in the City of Denton.

Figure 6



** Estimate. Sources: Texas Comptroller's Office, Center for Economic Development & Research*

Since 2002, annual retail sales in the City of Denton have risen from $1.2 billion to over $1.6 billion (see Figure 6). After upgrades on Loop 288 are completed, Denton should see even greater retail sales growth. Moreover, retail components of major developments such as Unicorn Lake and Rayzor Ranch will bring an array of new retail outlets from big-box stores to proprietor-owned boutiques (see "Review of Major Developments" section).

[3] North Central Council of Governments projects employment based on the number of jobs reported creating more robust projections than if based on number of employees.

Industry Profile: Aerospace / Aviation

The Texas Workforce Commission expects that key occupations in the air transportation service industry will continue to see growth through 2014 with the greatest demand growth for aircraft mechanics and service technicians. Other related industry segments such as aircraft interior fittings and furnishings will likely see growth, though data for these activities are typically combined with related non-aviation uses. Overall, the aviation sector is seen as an important driver of the regional economy extending beyond the area's major airports.

Table 10

Projected Growth in Aerospace/Aviation Employment for North Central Texas 2004 – 2014

Occupation	Regional Employment	Projected Employment	Absolute Change	% Change
Aerospace Engineers	350	400	50	20.8%
Aerospace Engineering & Operations Technicians	50	50	0	0%
Avionics Technicians	135	182	47	34.8%
Aircraft Mechanics & Service Technicians	560	814	254	45.4%
Air Traffic Controllers	24	32	8	33.3%
Airline Pilots, Copilots, and Flight Engineers	14	15	1	7.1%

Source: Texas Workforce Commission

For Denton County and the City of Denton, aerospace/aviation sector growth is expected to center on Denton Municipal Airport (DMA). Although primarily a general aviation super-reliever airport for DFW International, Denton Municipal Airport still logged over 100,000 operations in 2007 and is estimated to have a $58.4 million dollar economic impact on the region. The airport focuses on the needs of area businesses and specializes in corporate and general aviation uses. Some area businesses that rely on the airport for corporate travel include Peterbilt, Sally Beauty, Tetra Pak, Victor Equipment, Wal-Mart, Jostens, and Hulcher Services.

Companies

Along with service and maintenance operations and the housing of airplanes, some of Denton Municipal Airport's economic impact is due to aviation companies utilizing the airport as a base for their operations. Due to the volume of flights conducted out of the airport, several companies now provide services such as maintenance, fueling, flight instruction, and sales. The scope of this business extends internationally with Jet Works Air Center being the only completion center in the United States for Italian plane manufacturer, Piaggio Aero. The world's fastest turboprop business aircraft, Piaggio airplanes arrive at DMA from Italy as unfinished base models. The aircraft are then customized by Jet Works Air Center employees to end-consumers' specifications. Owens Aviation, Inc., U.S. Aviation Group, Aircraft Precision Maintenance, Longhorn Helicopters, Avionics International, and Business Air/Jet Works Air Center all benefit from their location at DMA.

Labor Force

The air transportation industry employs workers with varying levels of education. Depending on the position, training may include one to four years at a vocational school, college,

or specialized FAA-approved facility. In some cases, a combination thereof may be required. Currently, there are no four-year programs in the North Texas area. Many local students have no other option than relocation to Oklahoma for aviation schooling. The University of North Texas is in the planning stages of creating a comprehensive aviation sciences program, which would create synergies with the airport, its supporting businesses, and the university.

Outlook

As the North Texas region continues to grow in population and economic activity, so too will the demand for corporate- and general aviation-related services. However, the fastest growing segment of the air transportation industry is not the major players in the game, but smaller entities offering specialized services. Denton Municipal Airport is perfectly positioned to benefit from this growth as a provider of maintenance services.

In addition, the DMA is also serving as a hub of industrial activity not always directly related to aviation. With current plans to expand development near the airport, we see DMA as becoming a major employment center for Denton over the next several years.

Industry Profile: Health Care Services

Denton County has experienced several years of rapid growth in the health care industry. From 1998 to 2005, Denton County's employment in the health services industry rose by more than 40 percent to a total of about 11,700 employees at 848 individual firms.

The North Central Texas Council of Governments lists three of City of Denton's health care employers – Denton State School, Denton Regional Medical Center and Presbyterian Hospital of Denton – as the fifth, sixth and seventh major employers in the city with over 3,000 combined employees. This is no surprise considering the United States Department of Labor named health care as the largest and fastest growing industry in the country currently providing about 14 million jobs.

Table 11

Projected Growth in Medical Industry Employment for North Central Texas 2004 – 2014

Industry	Regional Employment	Projected Employment	Absolute Change	% Change
Medical & Diagnostic Labs	450	650	200	36%
Ambulatory Health Care Services	21,900	32,600	10,700	48%
Hospitals, Public & Private	12,650	15,400	2,750	21%
Nursing & Residential Care Facilities	11,850	16,150	4300	36%

Source: Texas Workforce Commission

Additionally, Denton Regional Medical Center and Presbyterian Hospital of Denton are the second and third largest private employers in the city as well as the largest tax payers. Between 2006 and 2016, the Bureau of Labor Statistics estimates this industry will generate three million new jobs – more than any other industry. Similarly, the Texas Workforce Commission expects substantial on-going growth in this employment sector.

The health services industry is supported locally by the presence of outstanding academic and research programs at Texas Woman's University and the University of North Texas. U.S. News and World Report recently ranked TWU programs in occupational therapy, physical therapy, and health librarianship among the nation's best. TWU has the largest doctoral nursing program and the fifth largest nursing program in the US. The University of North Texas has become one of the leading centers for autism research in the nation. These programs not only provide trained staff for Denton's health care providers, but also make the area attractive to the best health care professionals as a place to practice their trade.

Hospitals

The City of Denton has become a regional medical center providing in-patient and out-patient services to residents across Denton County and portions of Cooke, Wise, Montague, and Collin counties, and beyond. The addition of Presbyterian Hospital of Denton and the renovation of Denton Regional Medical Center has proven to be a catalyst for new health industry services in the region and is contributing greatly to the growth and diversity of the Denton economy.

Denton Regional Medical Center (DRMC) employs about 850 employees and has 250 physicians on staff. The 200-bed center offers a full-spectrum of healthcare that includes advanced open-heart surgery and many neurosurgery programs. Last year, the hospital added the only image-guided radiation therapy in the county to the cancer center, which is designed to deliver precise forms of radiation to a tumor, sparing the surrounding normal tissue.

Presbyterian Hospital of Denton services not only the North Texas area but residents of southern Oklahoma as well. The hospital staffs about 750 employees and more than 275 physicians certified to practice at the hospital. The 255 all-private rooms include a 28-bed all-private emergency department, nine surgical suites, three cardiac catheterization labs and three endoscopy suites. The hospital's campus also includes an education facility and community meeting space as well as two medical office buildings. The hospital also has a Center for Women that includes a state-of-the-art neonatal intensive care unit.

North Texas Hospital, a doctor-owned hospital conveniently located across the street from Denton Regional Medical Center, was the first healthcare facility in Denton County to acquire the Da Vinci Robotic Surgical Operating System. In 2007, doctors at the hospital performed their first robotic-assisted hysterectomy. The system, which provides doctors with improved dexterity, precision and 3D visualization, will be used in certain urological procedures beginning spring 2008.

Hospitals are perhaps the best community and economic development targets for offering employment opportunities to the broadest cross section of area residents. Not only are there a wide range of skills and skill levels needed, most hospitals offer excellent on-going training and career advancement opportunities for administrative, professional and support staff workers.

Residential Care Facilities

Denton State School is the third largest public employer in the city serving as a residential home for about 600 people with some form of mental retardation or developmental disabilities. Many of these residents require round the clock medical attention by a team of over

1,300 doctors, nurses, and staff employed at the school. Demographic data suggest that the need for state school services will continue to grow. Therefore, we expect Denton State School to continue expanding to meet increasing demand for skilled care-givers in the regional economy.

Denton has also seen the recent opening of new senior and assisted-living housing complexes adding to the availability of local care options for Denton's elder population. These include The Vintage near Presbyterian Denton and Dogwood Estates located close to DRMC near the Unicorn Lake development. Existing facilities include Denton Good Samaritan Village and Robson Ranch, an active adult community.

Specialty and Other Health Services

Each of the area's hospitals has seen ancillary development of doctors' offices and specialty health care services such as back treatment and plastic surgery clinics. In addition, Select Medical Corporation is building a 44-bed long term acute care hospital in Denton specializing in spinal cord injuries and severe brain trauma. The City of Denton has reached the critical mass of health services activities that will attract further organic development in this industry to the city.

Industry Profile: Research and Development Services

The impact of research and development services is not best expressed in terms of employment in companies primarily engaged in that activity. Overall, research and development services represent about three-tenths of one percent of total state employment. Yet, research and development underpins much of the economic development strategy pursued by the state and many cities. One reason for this contradiction is a data issue. Many companies engage in research and development activities, but it is not their primary product and therefore their employment data appear in other industrial categories. More importantly, research and development is a catalyst activity that when conducted in an economically nurturing environment sparks innovation and creates technological spillovers to a wide range of industries and activities.

The Bureau of Labor Statistics classifies research and development into three categories: basic research, applied research and development. Basic research involves a high level of theory and is very economically risky. Many of these projects fail to produce finite results, much less result in a marketable product. Therefore, most of this research is conducted by government, universities, or nonprofit organizations. Applied research is described as being the bridge between science and business. This research is gathered and directly applied to solving a problem, usually producing several options. These endeavors can range from pharmaceuticals to conducting materials to process improvements. Development activities refine technologies from applied research and convert it into an immediately usable product. This component of R&D is usually conducted by private industry. According to the National Science Board, development accounts for more than half of research and development spending.

Research Facilities

Perhaps the most exciting prospect in research and development activities is the recent creation of Discovery Park at the University of North Texas. Discovery Park occupies a 550,000 square foot former Texas Instruments facility and is home to the UNT College of Engineering, School of Library and Information Sciences, the PACCAR Technology Institute, and will soon host a technology-focused business incubator. Laboratory equipment at Discovery Park is already setting new standards for research capacity.

Table 12

Projected Growth in Research and Development Employment for North Central Texas 2004 – 2014

Industry	Regional Employment	Projected Employment	Absolute Change	% Change
Scientific Research & Development Services	250	350	100	36%
Other Professional, Scientific, Technical Services	3,050	4,100	1,050	33%

Source: Texas Workforce Commission

Currently, the UNT College of Engineering owns a focused ion beam microscope, a transmission electron microscope and a local electrode atom probe. No other industry or academic lab in the world is using all three of these devices together for research. The atom probe is one of only two probes in the nation owned by a university.

Since 1901, Texas Women's University has specialized in teaching students while being a research institution. Through its several health services research centers, TWU faculty and staff researchers are addressing cutting edge questions of healthcare delivery and basic medicine.

Industry Profile: Manufacturing

The following briefly reviews a wide range of manufacturing activities illustrating the diversity of activities in this sector of Denton's economy. Across the nation and Texas, manufacturing has been witness to a prolonged trend of workforce reduction. Despite employment losses, this trend does not reflect the overall state of this industry sector. Advances in technology and shifts in business practices have allowed for continued profitability for many manufacturing companies. This seeming paradox can be seen in Texas between the years 1997 and 2002, wherein the U.S. Census Bureau's Economic Census documented a 10.5% decline in manufacturing employment while "sales, receipts, or shipments" by manufacturing entities increased by 5.2%.

The greater North Central Texas area has an abundance of manufacturing companies with Denton being home to some of the largest in the area. The Texas Workforce Commission predicts that many sub-sectors of the manufacturing industry in North Central Texas will also have strong employment growth in the future. This growth will further bolster the region as a viable location for manufacturing relocation as well as fertile ground for new manufacturing ventures.

Table 13

Projected Growth in Manufacturing Employment for North Central Texas 2004 - 2014

Industry	Regional Employment	Projected Employment	Absolute Change	% Change
Manufacturing	69,000	78,750	9,750	14.1%
Cement & Concrete Product Manufacturing	3,400	4,400	1,000	29.4%
Nonferrous Metal (Ex. Aluminum) Production & Processing	900	1,150	250	27.8%
Fabricated Metal Product Manufacturing	6,050	7,350	1,300	21.5%
Machinery Manufacturing	4,700	5,850	1,150	24.5%
Other General Purpose Machinery Manufacturing	2,200	3,000	800	36.4%
Motor Vehicle Body & Trailer Manufacturing	1,050	1,450	400	38.1%
Motor Vehicle Parts Manufacturing	2,250	2,300	50	2.2%
Other Misc. Manufacturing	1,500	1,700	200	13.3%

Source: Texas Workforce Commission

Companies

Denton's economic landscape is populated with manufacturing companies large and small with several of national prominence. What follows is a sampling of this landscape:

Acme Brick

Acme Brick Company is a manufacturer and distributor of brick and masonry related construction products and materials. The oldest continually operating company in the city, Acme's Denton plant was originally Denton Pressed Brick Company until acquired by the company in 1912. The Acme Brick Company currently employs over 200 people at its Denton location and recently celebrated its 116th anniversary nationwide.

Flowers Baking Company

The Denton-based location for this national food manufacturing company was established in 2004 and currently employs over 150. The location serves as a regional baking plant supplying product for the Natures Own, Cobblestone Mill, Roman Meal, and Sunbeam brands. The 211,000 square foot Denton location utilizes cutting edge technology in the baking industry and is designed to easily handle additional production capacity.

Jostens

Since 1970, Denton has served as production plant location for Minnesota-based Jostens, the national leader in class and championship ring manufacturing. With 280 employees, the plant is capable of manufacturing 35,000 rings each week during peak times. Due to the recent closing of the company's Massachusetts-based site, all ring manufacturing in the company takes place in the Denton facility. To accommodate this corporate restructuring, a 13,000 square foot expansion

of the Denton location is underway with a scheduled completion date of June 2008. Once fully operational, the expansion will provide for over 100 new jobs to Denton.

Mayday Manufacturing Company, Inc.

Founded in 1966, Mayday is an aeronautical parts manufacturing company that employs 160 workers while serving over 800 customers in 18 countries. By operating their plant 24 hours a day, 7 days per week, Mayday has produced over 100,000 different parts numbers for most of the major aerospace design groups in the world. Parts produced by Mayday are used in commercial aerospace applications as well as in military aircraft programs.

Nuconsteel

Nuconsteel is a fully integrated designer and manufacturer of steel framing. Since 2001, the Denton-based company has been providing load bearing cold-formed steel roof, floor, and wall framing systems for commercial and residential building projects across the United States. The company employs 180 across three Denton locations.

Peterbilt

One of America's leading heavy-duty truck manufacturers, Peterbilt Motors Company was founded in 1939 and was for many years based in California. Due to increased demand, Peterbilt opened a Denton, Texas manufacturing facility in 1980. The company subsequently moved its corporate headquarters and engineering department from California to Denton in 1993 and now employs 2,000 workers. The parent company of Peterbilt, PACCAR, recently established the PACCAR Technology Institute at the UNT Research Park. Funded by a permanent endowment and administered by the UNT Foundation, this institute will furnish state-of-the-art laboratories and classrooms. In addition, a PACCAR Professorship in the UNT College of Engineering was endowed by the company, providing for a full-time, tenured engineering professor.

Tetra Pak

Since 1983, Tetra Pak's Denton facility has manufactured aseptic packaging for liquid foods such as milk, juice, and juice-based drinks. With more than 200 employees, the plant engages in state-of-the-art and environmentally-friendly manufacturing processes.

United Copper

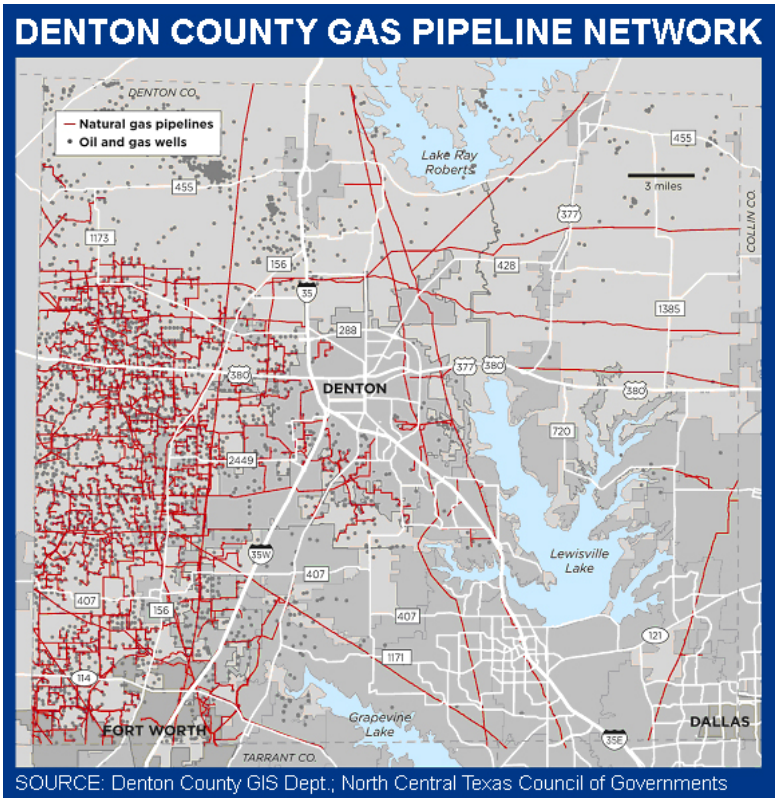
United Copper Industries is a manufacturer of copper building wire used in both residential and commercial construction. United's 500,000-square-foot plant opened in 1998 and is a state-of-the-art production and distribution facility with 264 employees. A recent expansion has given the company 100,000 square feet of additional room to meet increased production demand.

Labor Force

As manufacturing becomes more technical, the educational requirements to produce skilled workers have increased. Most production workers need to have some type of technical training beyond high school and will be expected to continue their education while employed. A two-year technical degree or certificate from a community college is becoming a standard

preference. Manufacturing plants are increasingly more efficient and responsive to technological changes in production requiring workers to possess flexible skill sets. Employers will continue to value mathematical and technical skill sets in production employees while looking for advanced business and engineer training in middle and upper level management positions. Overall, the number of employees needed in the manufacturing sector will continue to decline, however, there will still be employment potential as senior employees continue to retire at an accelerated pace.

Industry Profile: Natural Gas Drilling



The proliferation of natural gas wells and pipelines in the North Central Texas region serves as a signal that natural gas drilling is now one of its leading economic engines. Denton County is home to several thousand wells alone with more in the planning stages. The reason for this lies squarely on the discovery of the Barnett Shale, what is considered to be one of the largest natural gas fields in the United States. Already estimated as having an economic impact in the billions of dollars, industry experts predict that the current level of activity associated with the field will continue for 20 or more years. The Barnett Shale is responsible for 12% of Texas' natural gas production and 2.5% of national natural gas production.

Labor Force

While a majority of the companies responsible for the extraction of natural gas are located beyond Denton County, strong employment growth in the oil and gas sector within the county is projected. Additionally, it has been estimated that more than 2,500 jobs in Denton County have already been created as a result of the economic impact from natural gas extraction.

Table 14

Projected Growth in Oil & Gas Industry Employment for North Central Texas 2004 – 2014

Industry	Regional Employment	Projected Employment	Absolute Change	% Change
Oil & Gas Extraction	600	750	150	25%
Pipeline Transportation	150	200	50	33%

Source: Texas Workforce Commission

Outlook

While natural gas production and consumption are subject to fluctuations and influences of national and international origin, recent national forecasts predict a steady demand for natural gas produced in the North Central Texas region. The U.S. Energy Information Administration notes that while there may be a slight dip in residential and commercial demand in the coming years due to weather and economic factors, the increasing demand by industrial users will offset this trend. It is also predicted that an increasing burden for production will be placed on established natural gas fields in the lower 48 states as offshore production declines and costs related to new development increase.

Even with the recent economic benefits already realized, it is estimated that only 16% of the gas in the Barnett Shale is being accessed due to limitations of current technology and processes. With this as of yet untapped potential, if prices hold or increase for natural gas in the coming years, the continuing economic potential of the oil and gas industry in Denton County is of major significance.

Review of Major Developments

Market Square at Unicorn Lake

Market Square at Unicorn Lake, a 200,000 square foot retail, restaurant and office space project is currently under construction and planned for completion before 2020. The development is designed around a 33-acre lake and park area near Denton Regional Medical Center off of Interstate 35E south of the Golden Triangle Mall. It is projected to have 50,000 square feet completed by 2010, 160,000 square feet completed by 2015 and the full 200,000 square feet completed before 2020.

Unicorn Lake will include The Villas of Tuscan Hills – an upscale, gated residential community of 106 single-family homes priced from $400,000-$700,000. The development will also include commercial development with a hotel, medical facilities, banking center, three restaurants and 20,000 square feet of retail space.

Hills of Denton

Hills of Denton – located north of Loop 288 and east of Interstate 35 by the University of North Texas Discovery Park – is a mixed-use development that will include 110-acres of multi-family housing averaging 16 units per acre, 148 townhouses at about 10 units per acre, and 1,878 single family homes at three units per acre. Build out is expected by the end of 2015.

The majority of single-family homes in the Hills of Denton will be priced from $175,000 to $200,000 and townhouses are priced from $200,000-$400,000, but plans include some high-end homes priced over $1 million scheduled for construction near the end of the project. The developers project having several hundred houses completed by 2010.

Westview

On the west side of Interstate 35E is Westview, a 190-acre commercial tract of land at the end of Loop 288. There are no plans to develop this acreage, owned by the same developing company as Hills of Denton, until construction of the Loop 288 extension is completed.

Hunter Ranch

Hunter Ranch, also known as Inspiration – located west of Interstate 35W at the south edge of Denton City limits – is a mixed use planned development. Although still in the planning stages, this addition is expected to have a 15 to 20-year build out schedule dependent on market conditions. By 2020 Hunter Ranch is expected to have 8,543 high density housing lots and about 113,000 square feet of commercial and mixed use development.

Cole Ranch

Cole Ranch sits south of the Denton Airport, west of Interstate 35. Development plans include over 5.8 million square feet of commercial space and 11,603 residential units built over a 19-year period. This addition will be developed in eight phases beginning on the southeastern corner in 2009 before proceeding both north and west before reaching an anticipated build out by 2026.

The value of Cole Ranch is projected at about $150 million by 2010, rising to $1.8 billion by 2015, $2.7 billion in 2020 and over $3 billion by 2027 with 80 percent of the total value coming from residential units.

Rayzor Ranch

Rayzor Ranch, an estimated $1 billion project, has spent the last nine months in horizontal construction on a mixed use development located on 412-acres on Interstate 35 and University Drive (also known as Highway 380). The north side of the development, called Rayzor Ranch Marketplace, will include Sam's Club and Wal-Mart and other retail. Originally slated to open in spring of 2009, upheaval in the credit markets has created delays in securing

financial commitments for the next phase of development. Recent news stories have reported that the developer expects initial project openings to occur in spring of 2010