What will North Texas be like in 2030 … or in 2050? National forecasts of population and economic growth indicate that this region will continue to add residents and jobs well into the future. The characteristics of the nation’s people and its economy will be different in 2030 than they are today and these changes will also affect the residents and businesses of North Texas. In this chapter, these projections and trends are explained.

This chapter also brings together the plans that are in place today for development and for major investments in transportation, water service and other key facilities – those investment areas discussed in Chapter 3 for which there are long-range plans. Each of these plans considers the region’s anticipated growth. They reflect some trends that are changing the past pattern of regional development and investment, but assume that other trends will continue unchanged. Though there is coordination among the policy-makers to create and approve them, these plans are created through separate processes and are not explicitly integrated with one another. Taken together, as they are here, they paint a picture of the North Texas expected in 2030 if ‘business as usual’ is continued.

The People of North Texas

Overall Growth Projections

The North Central Texas Council of Governments prepares long-range demographic forecasts for the ten counties surrounding and including the Metropolitan Planning Area. The forecasts are developed to provide a uniform empirical base for intra-regional infrastructure planning and resource allocation. Based on the planning agency’s projections, these ten counties will have over 9.1 million people living in households and over 5.4 million non-construction jobs by the year 2030. As shown in Exhibit 4.1, the Texas State Data Center and the Texas Water Development Board projections offer alternative sets of assumptions about growth that are higher and lower than the projections made by NCTCOG.

Vision North Texas has elected to use the NCTCOG projections throughout its analysis for the ten counties that these projections address. Since the North Texas 2050 project is designed to address all 16 counties in the North Texas region, NCTCOG developed 2030 projections for the six outlying counties to be used for this purpose only. These projections are shown in Exhibit 4.1.

Exhibit 4.1: 2030 Population Projections for North Texas (millions of people)

<table>
<thead>
<tr>
<th></th>
<th>North Central Texas Council of Governments</th>
<th>Texas State Data Center – “no migration” scenario</th>
<th>Texas State Data Center – “high migration” scenario</th>
<th>Water Development Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-county area</td>
<td>9.1</td>
<td>6.2</td>
<td>12.3</td>
<td>8.8</td>
</tr>
<tr>
<td>16-county area</td>
<td>9.5</td>
<td>6.5</td>
<td>12.8</td>
<td>9.2</td>
</tr>
</tbody>
</table>
The 2030 projections produced by NCTCOG use the year 2000 as a base year and project population and employment in five-year increments to 2030. Over the 30-year horizon, the 10-county area is anticipated to add 1.5 million households, 4.0 million people in those households, and 2.3 million non-construction jobs. The 16-county North Texas region is anticipated to add 1.6 million households with a corresponding 4.1 million people and 2.3 million non-construction jobs. This represents an average annual population growth rate of 2.6% for these 30 years, a magnitude of growth never before experienced in the North Central Texas region. NCTCOG forecasts reflect only one set of growth assumptions. If circumstances change, real growth outcomes might be considerably different.

Demographics

Two factors will dominate North Central Texas demographic trends over the next twenty years. These are increasing diversity and the aging of the region’s population. The growth in non-white groups will be driven by migration and natural increase (births and deaths in the region). The region’s strong job market and international connectivity attract workers of all skill levels from all over the world. As long as the region’s economy remains strong, internal and external migration to the area is expected to continue. While fertility rates for non-white groups have been declining, they are still considerably higher than rates for whites. Even with mortality rates factored in, the rates of growth for most non-white groups, particularly Hispanics, outpace that of whites.
By 2030, the shape of the region’s population will bear less resemblance to a pyramid than to a rectangle. This is primarily due to the aging of the large baby boom generation. The other factor affecting the shape of the distribution will be migration, since people moving to this region tend to be those in the labor force – young and middle-aged adults.

There is likely to continue to be slightly more males than females. The more mature groups in the population are expected to be dominated even more by females while the younger population groups will continue to have higher shares of males.

Despite the impact of the aging baby boomers, natural increase and migration will keep the median age relatively close to the current figure. In 2030, the median age of the total population is projected to increase by just over a year to about 34.7 years.

The share of some key age groups will be different than in the past, however. In 2006, people in the age group that provides most of the labor force (ages 20 through 64) comprised 61% of the region’s population. In 2030, this age group will comprise only 57% of the population. On the other hand, seniors aged 65 to 84 were only 7% of the population in 2006 and will be 13% of the population in 2030. In fact, the age groups with the highest percentage increase from 2006 to 2030 are those from 70 to 74 and 75 to 79.

**Housing Demand**

By 2030, the region is expected to have over 9 million people living in households in the 10-county forecast area and 9.5 million people living in households in the 16-county Vision North Texas region. Household sizes, which have been generally declining for decades, are expected to continue to decline. However, the decline is not expected to be as dramatic as in the past. In fact, the average household size for the forecast area in 2030 is likely to be very close to the current household size as populations increase for those racial/ethnic groups that have historically had larger households.

These demographic changes will result in changes to the housing demand in the region. The sheer number of older and non-white residents will impact both the quantity and type of housing demanded in North Central Texas as well as the location of that housing.

Aging homeowners looking to downsize and trade in home maintenance for community living will certainly contribute to changes in housing demand. There is also likely to be an increase in demand for housing near transit. Studies have shown that certain demographic groups – singles, couples without children, elderly, and lower-income minorities – are more likely to find locations near transit attractive. Also, expansion of the region’s transit systems will locate stations closer to more neighborhoods, businesses and other destinations, making this a more convenient choice for more people.

The Center for Transit-Oriented Development has calculated the market for transit-oriented development, now and in the future, for the 42 metropolitan areas that have fixed rail transit systems that exist now or are planned to be in place in 2030. The Dallas region is expected to see a very large increase in the demand for housing within one-half mile of transit stations. This market segment was estimated at 46,429 households in 2007; the study projects that there will be 270,676 households in this transit-oriented housing market in 2030. To accommodate this anticipated demand, development around transit stations should include a variety of housing types and price levels.

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1 From Residential Strategies, Inc.’ Dallas-Fort Worth Executive Summary, Second Quarter, 2008

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Income and Wealth

Region-wide, real per-capita income is expected to increase by about 32 percent over the next 22 years. This is a higher growth rate than the estimated 26 percent increase over the last 22 years. But this increase is not expected to be experienced consistently in all parts of the region. Over the next several decades many of the counties in North Central Texas are expected to experience a decline in this index. Dallas is the only urban county expected to see an increase in relative wealth.

Exhibit 4.4: Change in Woods & Poole Wealth Index, 2008 - 2030

The North Texas Development Pattern

2030 Regional Forecast

The NCTCOG 2030 forecast was developed using a federally recognized land-use model that disaggregates the regional forecast of households and employment to 10-county projections (or control totals) and then to smaller geographies called forecast districts. The final step is an allocation of the district numbers to an even smaller geography known as traffic survey zones. Survey-zone-level figures can be aggregated to approximate city and market area projections. Part of the forecasting process includes extensive review by NCTCOG staff and consultation with city and county staff members. Local municipalities work with NCTCOG staff to ensure that local governments’ land use and comprehensive plans are considered in the forecast. A task force of local officials from city, county, and transportation entities acts as a governing body for the process and endorses the forecast for approval by NCTCOG’s Executive Board. The following maps are the result of this process for the year 2030. They illustrate the expected development pattern in North Central Texas if current population increases, employment growth and location trends continue. They reflect, in a general way, the long-range plans of cities within the region.

1 Forecast districts are subsets of counties. There were 478 forecast districts in the 10-county area for this 2030 forecast.
2 There were over 6,000 traffic survey zones in the 2030 forecast.
Exhibit 4.5: Forecast Residential Development Pattern, 2030

Household Population Per Acre

- None
- 0.01 - 0.04
- 0.04 - 0.07
- 0.07 - 0.10
- 0.10 - 0.14
- 0.14 - 0.25
- 0.25 - 0.50
- 0.50 - 1.00
- 1.00 - 2.70
- 2.70 - 5.50
- 5.50 +
Exhibit 4.6: Forecast Non-Residential Development Pattern, 2030

Employment Per Acre

- None
- 0.01 - 0.02
- 0.04
- 0.04 - 0.06
- 0.06 - 0.09
- 0.09 - 0.16
- 0.16 - 0.32
- 0.32 - 0.64
- 0.64 - 1.70
- 1.70 - 3.50
- 3.50 +
Development in Unincorporated Areas

Population growth in North Central Texas is not limited to incorporated cities and previously urbanized areas. Development approvals in the unincorporated areas of North Texas contribute to the ‘business as usual’ regional pattern as well. Currently, there are over 30,000 potential new housing units representing as many as 89,000 people in special districts such as fresh water supply districts and water improvement districts. In other words, there will be almost as many new residents living in these unincorporated areas as live in the city of Frisco today.

This growth in unincorporated areas has many planning implications including provision of services such as police and fire protection. Exhibit 4.7 shows locations of existing residential subdivisions, with undeveloped lots, in special districts.

North Texas Investments and Infrastructure

In this section, the plans for investment and infrastructure that affect the region are summarized. The section addresses the same set of investment and infrastructure issues considered in Chapter 3. There are no current plans for some of these issues. While the plans summarized here may have used the same or similar data sources and assumptions, they were not developed in coordination with one another.

Natural Assets

Currently, there are no regional plans related to the future of North Texas’ natural assets of habitat, plants, animals, open space areas and corridors, tree canopy or carbon footprint.

There are studies of particular topics that have been conducted for other purposes. For example, the Environmental Impact Statement of an individual project considers the project’s impact on endangered species. Also, there are studies underway on particular topics but for smaller areas within the North Texas region. Two examples relate to the urban forest in the city of Dallas. The first example is the work of the Dallas Urban Forestry Advisory Committee, which is researching techniques to document the details of the existing tree canopy in the city of Dallas. The Committee is conducting a 20 square mile pilot project to research the potential of using advanced imagery to survey the urban forest canopy cover. This cutting-edge technology may make it more feasible to manage today’s forest and plan for the forest of tomorrow. This information will assist in efforts to improve air quality, reduce urban heat island effects and winds, and support a potential carbon sequestration program relying on the urban forest to capture and hold carbon dioxide. Second, a Management Plan for Dallas’ Great Trinity Forest has been completed. It provides a 100-year management plan for this forest, which is the largest urban hardwood forest in the nation.

Water

The 2007 Texas Water Plan analyzes water issues for the state and for each water planning region. Developed by the Texas Water Development Board (TWDB), it provides estimates of water demand and supply, and describes the steps that are necessary to ensure an adequate supply of water to meet the state’s needs. By 2050, TWDB projects that the 16 county North Texas region will have 11.7 million residents. The region will demand 3.00 million acre feet of water, 62.9% of the water demand in regions C, D and G and 14.5% of the demand statewide. The annual amount of water consumption statewide is projected to decline significantly, from 0.81 acre feet per capita in 2000 to 0.51 acre feet per capita in 2050. In North Texas, there is a very slight decline in consumption during this time.

3 Exhibit 3.56 shows the areas included in these water planning regions.
Exhibit 4.7: Unincorporated Residential Subdivisions
Demand for water increases as the region continues to grow and by 2060 (the time horizon of the Texas Water Plan), this 16 county region is projected to have 13.3 million residents and demand 3.35 million acre feet of water, 63.3% of the demand in Regions C, D and G and 15.5% of the statewide demand.

Existing water supplies are not sufficient to meet the projected needs in 2060. The 2007 Texas Water Plan estimates that regions C, D, and G will have approximately 3.49 million acre feet of water supply available in 2060 from a combination of sources including surface water, groundwater and water reuse. These resources would be sufficient to meet the needs of North Texas by itself, but they are far below the level needed to meet all the needs of these three water planning regions, which are expected to need a total of 9.86 million acre feet of water in 2060. Clearly, additional investments are needed to meet the projected future needs of these regions and of North Texas. The Texas Water Plan identifies a total of $14.3 billion for capital improvements to serve regions by 2060. These investments support the construction of new reservoirs, increased conservation efforts, water reuse and other strategies. The recommended strategies are different for these three water planning regions, as shown in the exhibits above.

Failure to meet water needs could have a negative impact on the North Texas region’s growth and economic well-being. As part of
the 2007 Texas Water Plan, the Texas Water Development Board analyzed the economic impacts of a failure to meet water needs. If drought or a failure to invest in water supplies cause these three water planning regions to be unable to meet their water needs in 2060, the Water Development Board estimates that they would lose over 1 million residents, almost 745,000 jobs and $62.67 billion in income (from payroll, corporate income, rental income and interest payments in that year). Planning to meet water needs is an important part of the region’s future vitality; inclusion of a mix of water management strategies can make this a sustainable component of the region’s future as well.

Most of the water demanded in the 16-county North Texas region is for municipal use, which the TWDB defines as water use by residential and commercial consumers. The municipal share of water demand for the 16 counties increases from 86.1% in 2000 to 88.1% in 2060. In absolute terms, municipal water use in the 16 counties is projected to increase from 1.2 million acre feet in 2000 to 2.1 million acre feet in 2030 and 2.6 in 2050.

Energy

The Department of Energy predicts the North Texas region will increase its energy consumption (from all sources) by 0.5% every year until 2030. They also predict an increase in carbon dioxide (CO₂) emissions of 0.6% every year through 2030. If the region continues with ‘business as usual’ in 2030, North Texas will put 148.76 more million metric tons more of CO₂ into the atmosphere than the region did in 2005. Electricity consumption is predicted to grow by 0.5% every year as well. By 2050, North Texans will need 21% more production capacity than is currently available.

Public Facilities

Transportation Network

Transportation planning for North Texas is conducted by NCTCOG in its role as the region’s Metropolitan Planning Organization (MPO). The current plan for all aspects of transportation is Mobility 2030, adopted by the Regional Transportation Council in 2007. It covers the MPA area shown in Exhibit 3.1 and addresses roadways, transit, bicycle and pedestrian travel, aviation and goods movement to and through the region. Mobility 2030 estimates the construction costs of all proposed facilities and analyzes the impact planned facilities will have on the region’s traffic congestion, air quality, environmental justice and other issues. Mobility 2030 is fiscally constrained – it is required to include only those projects that can be funded with anticipated resources.

Mobility 2030 includes $29.8 Billion in improvements to the regional freeway, tollway, HOV and managed lane systems, shown in Exhibit 4.10. These recommendations include an additional 3,444 lane miles of freeways and tollways and an additional 626 lane miles of High Occupancy Vehicle (HOV)/Managed Lanes. The facility locations shown on this exhibit represent general locations, not specific alignments; specific design, access details and operational characteristics are determined through detailed project development studies of each individual project.

Expanding the regional transit system is a vital part of improving the transportation network in the Dallas-Fort Worth area. Transit service includes local bus, express bus, light rail, and commuter rail service. Transit system planning is a coordinated effort involving NCTCOG, Dallas Area Rapid Transit (DART), the Denton County Transportation Authority, and the Fort Worth Transportation Authority (The T). DART and The T jointly operate the Trinity...
Exhibit 4.10: Funded 2030 Roadway Recommendations

Legend:
- Red: New Freeway Facilities
- Green: New Tollway Facilities
- Blue: Add Capacity to Existing Freeway/Tollway
- Orange: HOV/Managed Lanes
- Brown: Improvements to Existing Freeway and HOV/Managed Lanes
- Purple: Selected New/Improved Regionally Significant Arterials
- Black: Freeways/Tollways

Map showing various roadways and cities, including Fort Worth CBD and Dallas CBD.
Exhibit 4.11: 2030 Passenger Rail Recommendations

Legend:
- Light Rail
- Light Rail - New Technology
- Regional Rail
- Regional Rail - Special Events Only
- Existing Rail Corridors
- Highways

Map showing rail corridors and major cities in North Texas.
Railway Express, a commuter rail service that carries riders between Fort Worth and Dallas, with several stops along the way.

*Mobility 2030*’s recommended passenger rail system is shown in Exhibit 4.11. It includes an additional 397 miles of rail lines. Only 146 miles of this system can be funded through current funding systems; the remainder is assumed to be funded through the new Rail North Texas Initiative. Corridor specific design, technology, alignment and operational characteristics for the Intercity Passenger, Regional Passenger and Freight Rail Systems will be determined through capacity evaluation, refinement of rail forecasts and ongoing project development. Three routes shown in this exhibit also have particular issues identified in *Mobility 2030*:

- The Cotton Belt Corridor between DFW International Airport and the President George Bush Tollway includes $50 million worth of mitigation expenses to curb impacts such as noise, vibration, and visual impacts.
- DART’s proposed West Dallas rail service will be evaluated in conjunction with the Union Pacific rail line between Fort Worth and Dallas. Further evaluation is needed to prevent duplication of service, determine alignment, vehicle technology, connectivity and staging.
- DART’s proposed SouthPort rail line extension will be evaluated in conjunction with the Dallas to Waxahachie rail service. Further evaluation is needed to prevent duplication of service, determine alignment, vehicle technology, connectivity and staging.

Improvements included in *Mobility 2030* will add over 4,000 lane miles of roadway capacity, about 400 miles of passenger rail, and many other capital, operational and air quality programs. These improvements are expected to cost $70.9 billion (in 2006 dollars).

Even with this significant investment, the region will see an increase in congestion on its roadways because the region will have more people and more jobs, and because those people will drive more. From 2007 to 2030, this plan projects that population will increase by 45.2% for the MPA, but that vehicle miles traveled will increase 59.3%. Because of increased miles of travel, and the location and timing of this travel, the hours lost to travel delay are expected to increase 65.7%. In 2030, after completing the $70.9 billion in transportation improvements funded by this plan, the region’s annual cost of congestion will be $6.6 billion (compared to $4.2 billion in 2007). Exhibit 4.12 shows the areas within the region expected to experience congestion in 2030.

*Mobility 2030* identifies facilities that would help meet the region’s mobility needs but that are not currently funded. As noted above, the passenger rail system shown in Exhibit 4.11 is not fully funded without the Rail North Texas Initiative. New mechanisms are needed to fund, build and operate the recommended passenger rail system shown in that exhibit.

Additional roadway capacity is also needed to alleviate major congestion throughout the region. However, the resources needed to fund many necessary projects are unavailable. Over $1 billion of recommended roadway improvements will rely on user fees (tolls) for their implementation. While a need for additional improvements exists, many must be deferred until more money is available.

The MPA faces almost $59 billion (in 2006 dollars) in unfunded needs through 2030; including $3.4 billion needed for the Rail North Texas Initiative. These needs are listed in Exhibit 4.13. Innovation will prove more necessary as the state and region continue to grapple with a combination of higher construction costs and less revenue. The age of the existing infrastructure will also place more importance on maintenance over time.
### Exhibit 4.13: Identified Transportation Funding Needs

<table>
<thead>
<tr>
<th>Metropolitan Transportation System Components</th>
<th>Funded Needs (Billions/2006 $)</th>
<th>Unfunded Needs (Billions/2006 $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation &amp; Maintenance</td>
<td>$18.7</td>
<td></td>
</tr>
<tr>
<td>Congestion Mitigation Strategies</td>
<td>$2.1</td>
<td></td>
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<tr>
<td>Bicycle &amp; Pedestrian Facilities and Transportation Enhancements</td>
<td>$1.1</td>
<td></td>
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<tr>
<td>Rail and Bus Transit System</td>
<td>$11.01</td>
<td></td>
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<tr>
<td>HOV and Managed Facilities</td>
<td>$3.3</td>
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<tr>
<td>Freeway and Toll Road System</td>
<td>$26.4</td>
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<tr>
<td>Regional Arterial and Local Thoroughfare System</td>
<td>$5.7</td>
<td>$6.0</td>
</tr>
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<td>Additional Cost to Purchase Right-of-Way</td>
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<tr>
<td>Rehabilitation Costs</td>
<td>$2.6</td>
<td>$32.1</td>
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<tr>
<td>Goods Movement/Rail Freight Costs (Trans-Tx Corridor)</td>
<td></td>
<td>$6.7</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$70.9 (55%)</strong></td>
<td><strong>$58.6 (45%)</strong></td>
</tr>
</tbody>
</table>

**TOTAL ALL NEEDS**

- **$129.5 Billion**

#### Education

There are currently over 1,100 elementary and over 600 secondary public schools in the region. In addition, there are over 230 private schools. The region is expected to add nearly 400,000 school-aged children over the next 22 years. This growth in the student population will necessitate additional schools, perhaps as many as 500 more, by 2030.

The locations and capacities of these facilities will be dictated by housing choices made by future residents. It is possible that existing facilities could be updated or reconfigured to service more students. It is just as possible that new facilities will need to be built to service substantial groups of residents who live farther away from existing facilities. Either way, the future of North Texas means more students and therefore more educational facilities.

Individual school districts plan for future facilities based on their own projections of future student demands. Currently, there is not a coordinated process for examining the need for new schools throughout North Texas, nor is there an assessment of whether future student demands could be met by existing facilities within the region if the students’ families lived near existing facilities.

#### Health Care

The health of a community is tied to the health of the individuals in that community. With a growing population comes a corresponding need for additional medical services. Also, an aging population will need even more general and specialized health care services. As health care improves and people live longer, these services will be needed for longer periods of time. Meeting the health needs of North Texas’ future residents will mean that the region must consider the demands for health care of a growing and changing population. The region’s private and public sectors will need to provide trained physicians, nurses and other health care providers, as well as the facilities and technology that enable these practitioners to meet the needs of North Texas residents.

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4 For this report, school-aged is defined as between the ages of five and eighteen years, inclusively.
North Texas – and Texas in general – faces challenges in terms of health and health care. The United Health Foundation ranks each state on a set of measures related to health. In 2007, Texas ranked 37th of the 50 states on this measurement of overall health issues. This assessment notes that Texas has the highest rate of uninsured residents among the 50 states – 24.5% of Texans are uninsured (an increase from 23.7% in 1990). Also, from 1990 to 2007, the percentage of obese Texans rose from 12.3% to 26.1%. A recent study by the Centers for Disease Control and Prevention connected the high levels of obesity in the state to diabetes, with Texas ranking 46th of the 50 states in its adult diabetes incident rate. While the North Texas region may score better than the state as a whole on these measures, they are still of concern for the region. If these trends continue into the future, there will be greater health care challenges for the region and a lower quality of life for its residents. To the extent health is related to the region’s pattern of development (as discussed in Chapter 3), the region’s choices about its urban form will affect the health of North Texas residents.

Texas is ranked 42nd among the 50 states in its ratio of primary care physicians relative to the population. This is an area where future needs will be especially acute. The number of medical students electing to become family practice physicians has fallen considerably due, in part, to a decrease in real pay for family practice compared to medical specialties. Many medical students are choosing specializations which allow more regular working hours and better pay. Compounding the issue is the fact that many current family physicians are nearing retirement age. The region already has a medical school, a dental school and nursing programs and several universities. The region needs to train and attract quality healthcare workers to ensure the continued vitality of the region.

In addition to basic medical care, there are other factors affecting the health of North Texas citizens. A few of these are highlighted below.

- Toxic substances in the air, water, and earth weaken the immune system and jeopardize the ecology and habitat in which we live.
- While some death and disease can be directly attributable to diet and lifestyle, there is no doubt that hazardous environmental conditions like air and water pollution, toxic building environments, poor soil quality and other stressors are often contributing factors.
- Land use and transportation patterns have been linked to public health in a number of recent studies. Studies suggest that an automobile dependent land use pattern damages human physical health because it promotes car dependence and sedentary lifestyles.
- Over the last 30 years, land use trends have resulted in ever increasing economic segregation of the region’s urban and non-urban residents. Poverty is often associated with poor health. A disproportionate percentage of our African American, Hispanic and other ethnic residents are low income.

These examples serve as an illustration that there are many aspects contributing to regional health and well being. Just as important as the need for more doctors is the need for more attention to environmental and social factors that affect health.

As with education, there is not a unified or coordinated planning effort to ensure that needed health facilities will be in the right locations to serve the region’s future growth pattern.

“...The Metroplex is the fourth largest metropolitan area in the country. However, we rank 27th in the number of opportunities for training medical students.”
1 Fort Worth Business Press