1. POPULATION AND DEMOGRAPHIC ASSESSMENT

Introduction:
The following text presents an assessment of population and demographic trends within the Town of Westlake and its more regional context. This assessment looks at five important dimensions of the population issue. The first issue is magnitude of growth, answering the question of how many people will likely be living in Westlake over the time frame of this 2040 Plan. The second issue concerns the potential conflict between that rate of growth and certain limitations to growth imposed by entitlement, infrastructure and land supply. The third issue derives from the pressures that a rapidly growing regional context places upon the Town of Westlake, whose population growth is ultimately limited by capacity issues. The fourth issue concerns the positive and negative impacts of present and emerging population tapestry characteristics (i.e., a consequence of certain demographic attributes). Finally, the fifth issue is the impacts of regional and local population growth on Westlake Academy.

The five issues described above reveal a broad view of population and its response to local conditions, as well as its effect on the Town. Through such understanding, the Comprehensive Plan Update is better informed. More specifically, the population related issues are:

Population Issue #1: Growth Rate and Population Projections.
The first and perhaps most important population question to address is "what will the population of Westlake be by 2040". The challenge to answering this question is the multiple growth-rate-effecting dynamics of change active within the Town and its regional context. Therefore, the Planning Team decided to chart a number of applicable growth rates and use as the **"Planning Growth Rate"**, a rate line that summarizes (correlates) the distribution of growth rates plotted. This "analogue" approach seems to best internalize the multiple growth rate influences present, emerging, and yet to come. The particular growth rates charted are as follows:

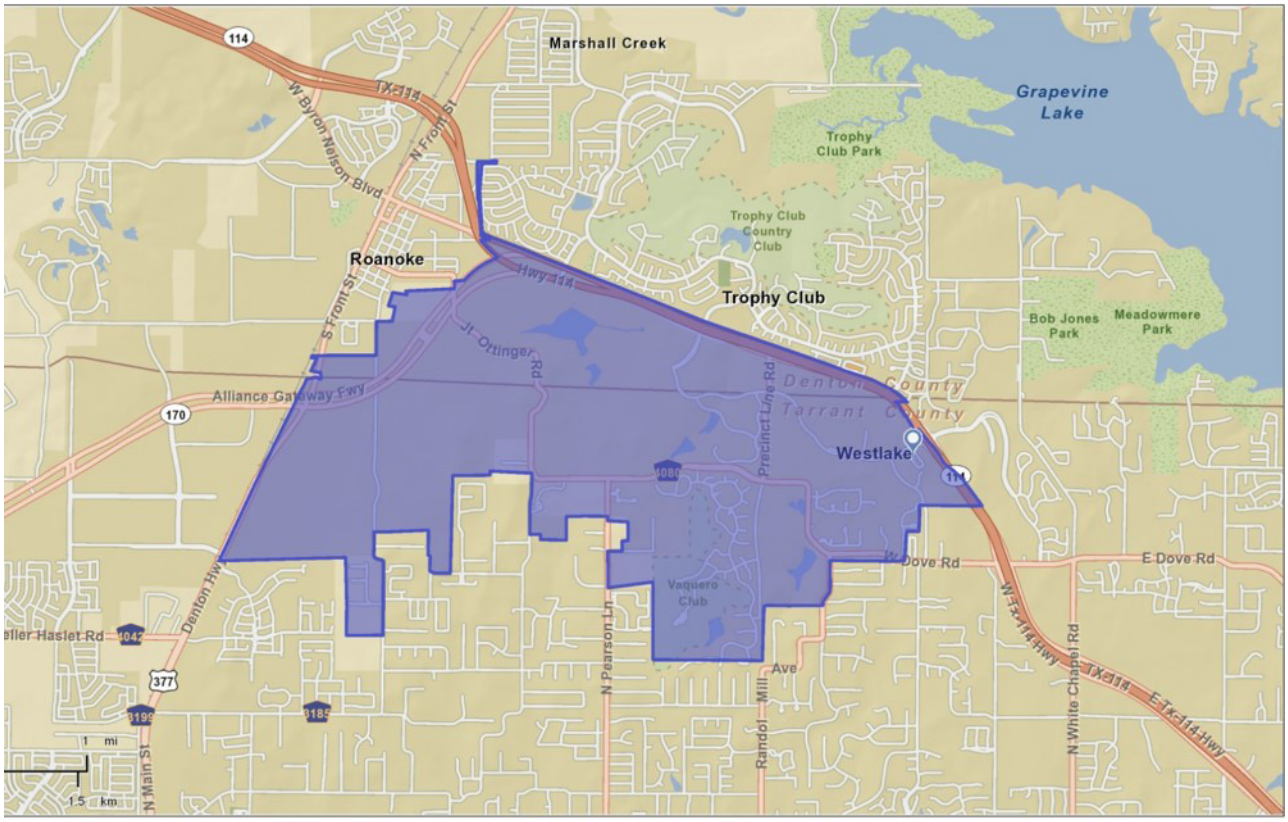


Figure 1: Historical Growth Rate Extrapolation

Growth Rate #1: The Historical Growth Rate Extrapolation. This growth rate calculation is simply an application of recent census growth rate (2000 to 2010) as a rate into the future. Figure 7 shows that the 2000-2010 growth rate of 5.62% (compounded yearly to 2040) will yield a 2040 population of 5,101.11 people. This is based on a 2000 population of 574 as reported by ESRI. However, SDS says that the 2000 population was 207, which yields an annual growth rate of 16.9% annually (higher than neighboring communities and would yield a 2040 population of 17,309, if applied). The annual growth rate for population growth from 2010 to 2013 (1,030 people) is a mere 1.26%, annually. This recent rate trend does not support extending such an aggressive 16.9% rate into the future. Therefore, the Planning Team will use the ESRI rate. While methodologically defensible, this simple application is crude in that it does not anticipate rate change (positive or negative) in the future. There are many issues that could bend the rate curve upward, such as absorption of the land supply in neighboring communities or significant growth of employment in the Westlake area. However, it does function well as a reference rate and is, therefore, included in this analysis.

Growth Rate #2: The Five City Growth Average. It is extremely enlightening to view Westlake in comparison to its neighboring cities; namely, Southlake, Roanoke, Keller, and Trophy Club. The case can be made that Westlake will perform, in the future, similar to its immediate neighbors, unless there is some significant locational or other advantage Westlake holds or there is some extreme deficiency in the neighboring communities. Figure 2 illustrates the geographic range of the five city area. Therefore, the second plotted growth rate is an

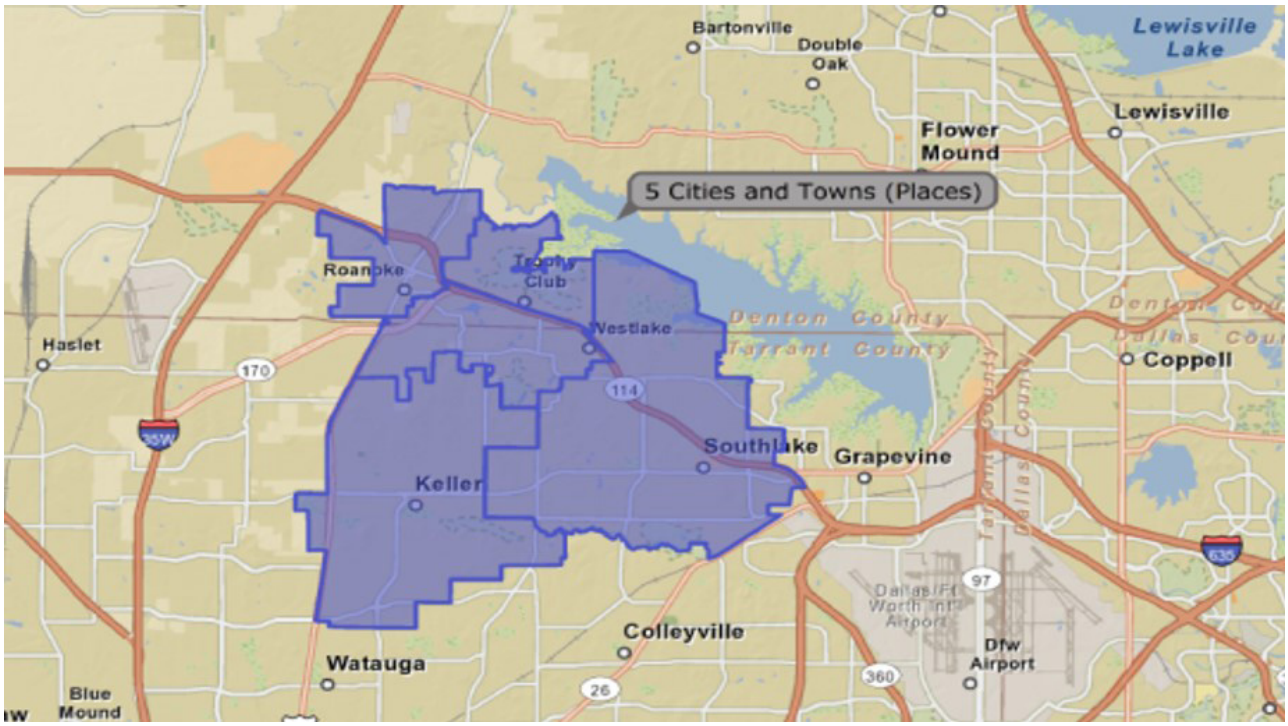


Figure 2: Five City Growth Rate

average of the growth rates for Westlake and its four municipal neighbors. This produces an average rate of 3.38%, when compounded annually to the year 2040 and will yield a population of 2,698.10 people. Note that this rate is considerably lower than the Westlake-only rate. This illustrates the trend of rates flattening as cities grow. Flattening of rate is something that Westlake will experience and that the historic rate is not responsive to. Therefore, an average of the Westlake historic rate and the five city rate will give greater weight to the effect of early growth; it will dominate Westlake's rate for some time while also recognizing the tendency of that rate to flatten over time (as neighboring cities are now experiencing).

Growth Rate #3: The Near Regional Context Growth Rate. Just as the case that Westlake will perform in a manner that is similar to its municipal neighbors can be made, it can also be said that Westlake's performance will reasonably approximate the performance of what the Planning Team refers to as "The Westlake Region". Figure 3 shows the geographic reach of the Westlake Region. This area was chosen because it considers numerous rate-effecting growth dynamics at one time. These rate-effecting growth dynamics include:

- **The influence of 35W in combination with the general east to west advance of city growth, especially from Dallas markets:** The typical view of population growth rate in this area is to project the influence of an expanding Dallas market. Once it consumed Colleyville, it consumed Southlake; once Southlake established a critical mass, it moved into Keller. What is interesting to recognize is that while Colleyville was emerging and Southlake was yet to be the growth center it became, Trophy Club was already active as a destination residential environment. This illustrates the likelihood that beyond a certain distance from Dallas,

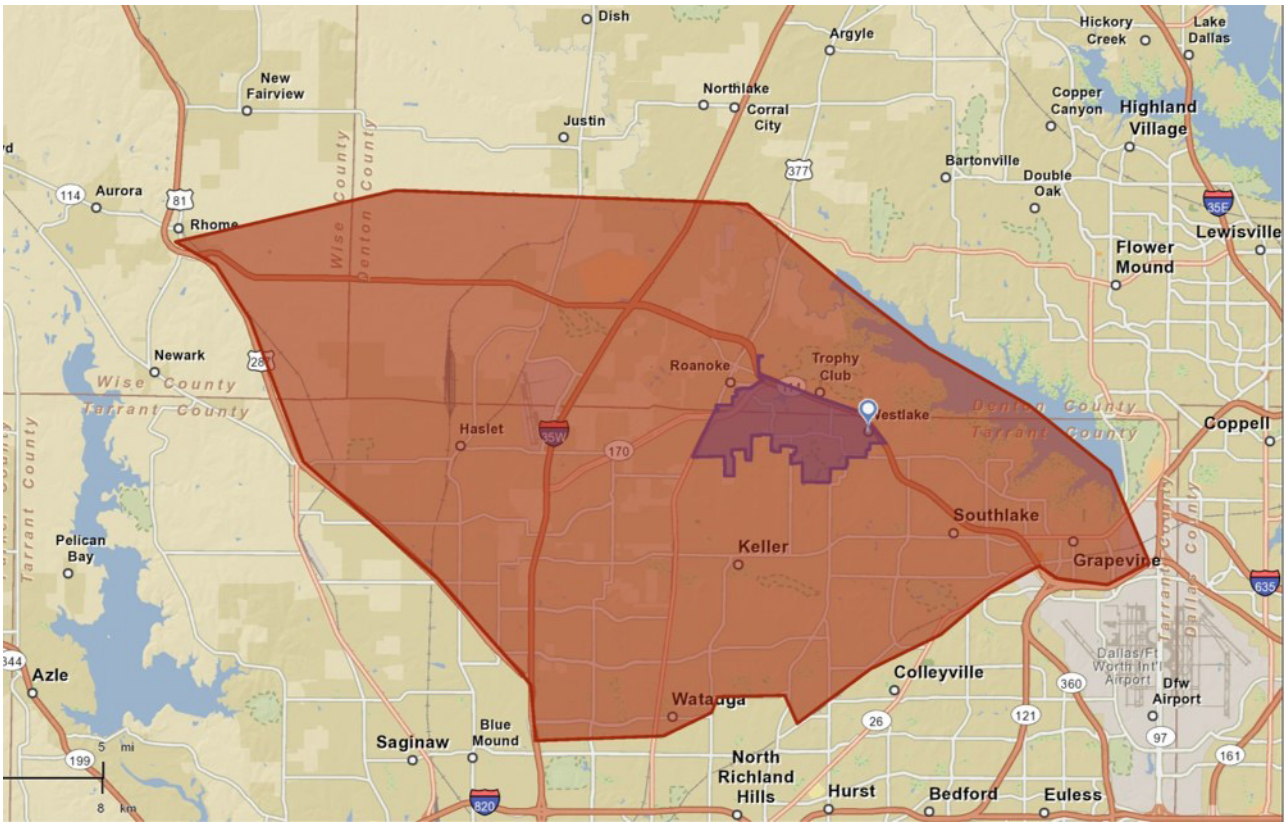


Figure 3: Near Regional Context Growth Rate

the Dallas market merges with the Tarrant County market; places like Roanoke, Westlake, and Trophy Club fall in that as yet unspecified market territory. The traditional Dallas market view does not factor in the influence of the Tarrant County market, which seems to cling to 35W. Therefore, a larger Westlake region that embraces the dynamics of both markets places the influence of 35W alongside the east to west advance of Dallas activity.

- **Movement of growth from south to north:** While historic growth has moved from east to west along major corridors like 121 and 114 (this is the advance pattern of the expanding Dallas market), it is becoming clearer that growth from south to north (the advance pattern of the Tarrant County market) is playing an ever larger role in how this area will fill-out. Therefore, the Westlake regional view balances the highly aggressive population rate numbers associated with east to west movement with the less aggressive numbers of south to north movement. In that Westlake's future lies within the combined effects of these markets, a broader view of growth rate is useful in making the "Planning Rate" a reflection beyond what the Dallas market is doing.
- **The barrier effect of Lake Grapevine:** An important feature to population growth is the extent to which its geographic distribution is influenced by features in the landscape. When population growth moves north of SH 114, it quickly encounters the barrier imposed by Lake Grapevine. Therefore, while the Dallas market continues to reach out through Flower Mound, Highland Village, and now Hickory Creek, the influence of Lake Grapevine makes the Tarrant County market more

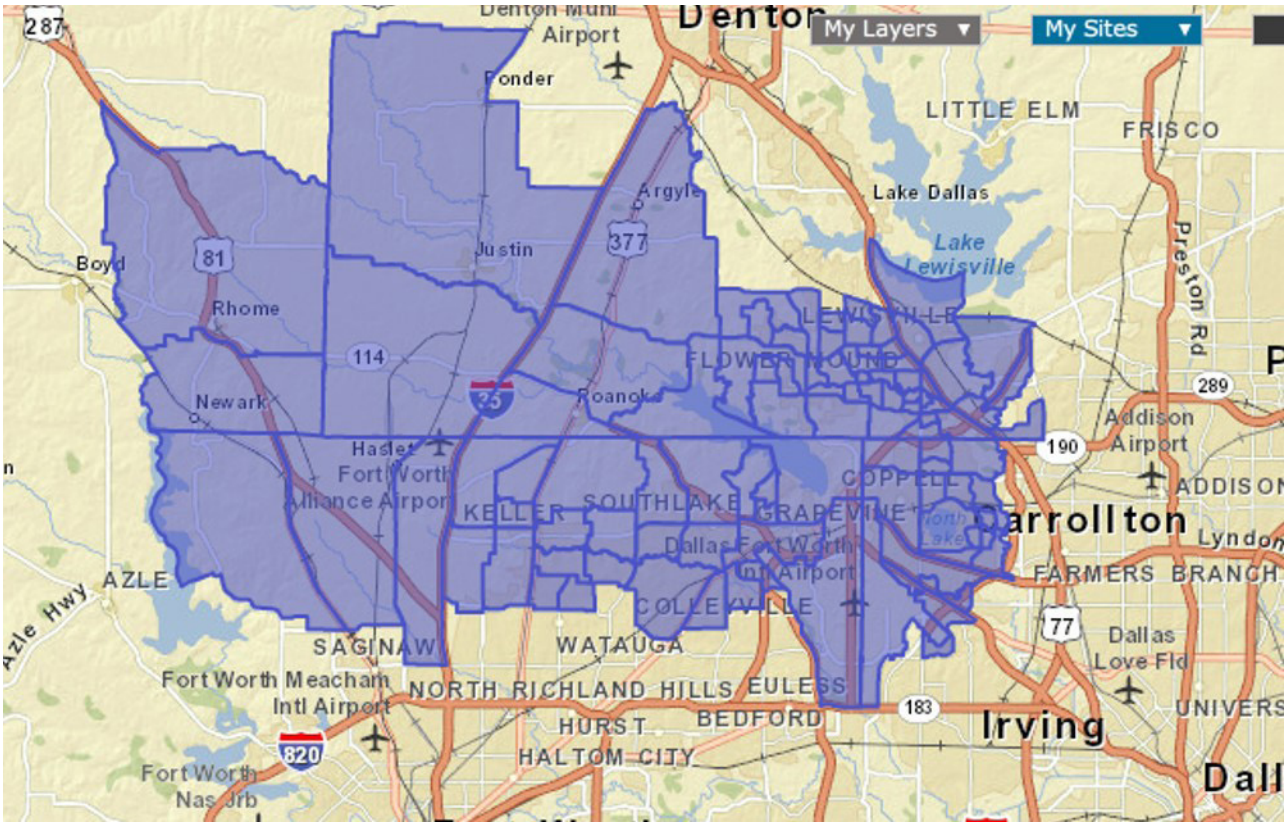


Figure 4: North Central Region Growth Rate

important to the future of Westlake.

For all these reasons, the Planning Team has plotted the Westlake regional growth rate of 6.59%. This rate, compounded annually to the year 2040, will yield a population of 5,927.25 people.

Growth Rate #4: The North Central Region Growth Rate. An important influence over the future growth rate of Westlake is the growth rate of the more general north central regions of Tarrant and Dallas Counties. Figure 4 shows the geographic reach of this area. The general area resides north of TX 183 and south of US 380. Also, it is limited in its east and west reach, stopping at Flower Mound/ Lewisville on the east and Newark/ Aurora on the west. Note that it avoids the urban cores of either Dallas or Fort Worth and circumscribes the north central growth area lying between the two cities. This larger view has all the benefits that the Westlake regional view has but embraces more growth conditions that are relevant to the future. Therefore, the Planning Team has included it as a rate to be considered. Being one rate out of six considered, it allows mega-regional trends to be appropriately weighted in the analysis. Addition of this rate as a rate to be factored into the overall correlation can be considered as a normalization of the analysis, thereby buffering the influence of individual eccentricities. The North Central Regional Growth Rate of 4.66% compounded annually to the year 2040 will yield a population of 3,615.37 people.

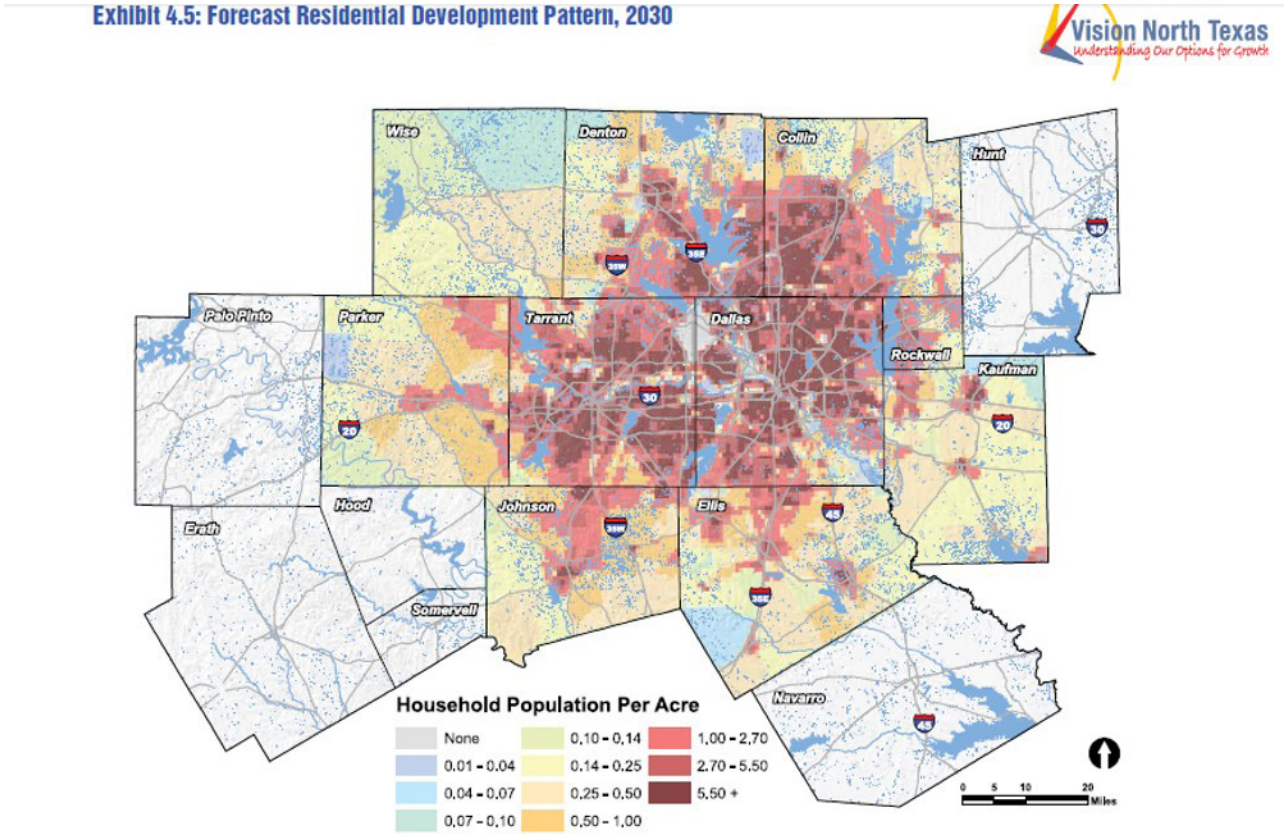


Figure 5a: Corridor Effect Growth Rate

Growth Rate #5: The Corridor Effect Growth Rate. As one looks around the Metroplex, it is apparent that cities and townships located adjacent to major corridors grew (and are growing) at a higher rate than cities and towns not so located. In that Westlake is a town located on the SH 114 corridor and that SH 114 is one of the more active corridors in the Metroplex, overall, it is reasonable to assume that Westlake will realize this "corridor effect" in its own growth rate. The anticipated power of the corridor influence is best expressed by the entitlements currently embodied in PD 1 through PD 4.

In order to arrive at a "corridor rate" for Westlake, the Planning Team considered the growth rate of 12 corridor communities. Some of these communities are high rate performers and others are not, thereby giving a balanced view of the "corridor effect" on growth rate. The communities chosen for this analysis are:

- **Rockwall:** This is an emerging growth performer just now entering its high velocity growth period. The 2000-2010 annual growth rate of Rockwall is **5.97%**.
- **Allen:** This is a mature corridor growth community. The 2000-2010 annual growth rate of Allen is **6.70%.**
- **Fairview:** Fairview has demographic attributes similar to Westlake and also similar attributes of form. The commercial center of Fairview (holding about as much commercial as Westlake retains in its PD's) lies along US 75 with the residential areas beyond, much like Westlake. The 2000-2010 annual growth rate of Fairview is **10.97%.**
- **Roanoke:** This community displays the particular effects of the SH 114 corridor and a major north/ south highway. The 2000-2010 annual growth rate of Roanoke is **6.02%.**
- **Forney:** Forney is a township along the I-20 corridor. The 2000-2010 annual growth rate of Forney is **10.41%.**

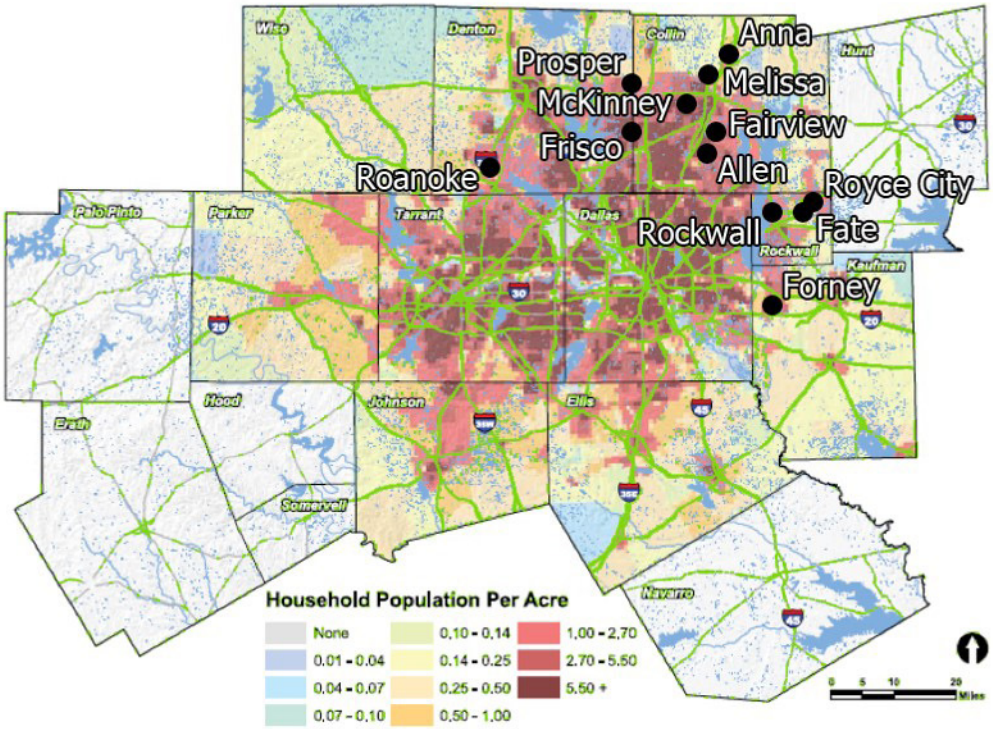


Figure 5b: Corridor Effect Growth Rate with Ref. Cities

- **Prosper:** Prosper is a corridor township immediately beyond another corridor city that is growing rapidly. The 2000-2010 annual growth rate of Prosper is **13.93%.**
- **McKinney:** Located in the US 75 corridor, McKinney is a mature growth center. The 2000-2010 annual growth rate for McKinney is **9.09%.**
- **Melissa:** Melissa is a township along the US 75 corridor that is on the fringe of growth. The 2000-2010 annual growth rate for Melissa is **8.66%.**
- **Frisco:** Frisco is a township along the Dallas North Tollway currently encountering the corridor growth effect. The 2000-2010 annual growth rate for Frisco is **13.21%.**
- **Fate:** Fate is a township along the I-30 corridor currently encountering corridor driven growth. The 2000-2010 annual growth rate for Fate is **12.23%.**
- **Anna:** Anna is a township along the US 75 corridor currently encountering growth. The 2000-2010 annual growth rate for Anna is **13.67%.**
- **Royce City:** Royce City is a township along the I-30 corridor currently encountering growth. The 2000-2010 annual growth rate for Royce City is **9.81%.**

The average growth rate for these corridor cities and townships is **10.05%.** Therefore, the average rate compounded annually to the year 2040 will yield a population in-migration dynamic of 53,827 people in Westlake. While this number far exceeds the capacity of Westlake, it represents a velocity of growth and places Westlake at its point of capacity relatively early in the future. The justification for recognition of the corridor related growth rate impact is illustrated in Figures 5a and 5b (published by NCTCOG and part of the Vision North Texas growth analysis). Note that the highest population densities are illustrated in the vicinity of the US 377 and SH 114 intersection. Such densities are also shown for the corridor communities selected in Figure 5b.

NCTCOG 2030 POPULATION FORECAST								
	2000	2005	2010	2020	2030	**TOTAL**	% chg.	**Yr. Rate**
Roanoke	2,794	6,231	6,499	9,554	9,782	**6,988**	250.1%	**4.27%**
Trophy Club	6,351	7,530	8,645	9,895	10,057	**3,706**	58.35%	**1.54%**

Figure 6: NCTCOG 2030 Population Forecast Table

Growth Rate #6: The NCTCOG Growth Rate. It is important to compare the population growth potential projected by this analysis to what has been published by the North Central Texas Council of Governments (NCTCOG). In 2011, NCTCOG released population forecasts for 2035 and stated that Westlake would attain a population of 8,100. In earlier forecasts, NCTCOG projected a 2030 Trophy Club population of 10,057 people (1.57% annual growth rate), which is 24% (3,194 people) less than the historic growth rate (2.54%) projected potential. The 2030 NCTCOG projection for Roanoke is 9,782 (4.27% annual growth rate). This is half of what the historic growth rate (6.02%) projects as growth potential. The difference is best explained in Figure 6 above.

Note that population grows aggressively between 2000 and 2005 (Trophy Club = 17.4%) but flattens out between 2005 and 2010 (Trophy Club = 85%). Then, again, it grows between 2010 and 2020 (Trophy Club = 4.01%) but flattens out between 2020 and 2030 (Trophy Club = 24%). The Planning Team's analogue approach will internalize the flattening dynamics and yield a more equally distributed result.

Each of the above described growth rates is plotted in Figure 7 and labeled 1 through 6. The large green line represents the correlated line, the "Planning Rate", that is used throughout this planning process to establish the 2040 population potential. The term "population potential" is used in this case because capacity to hold

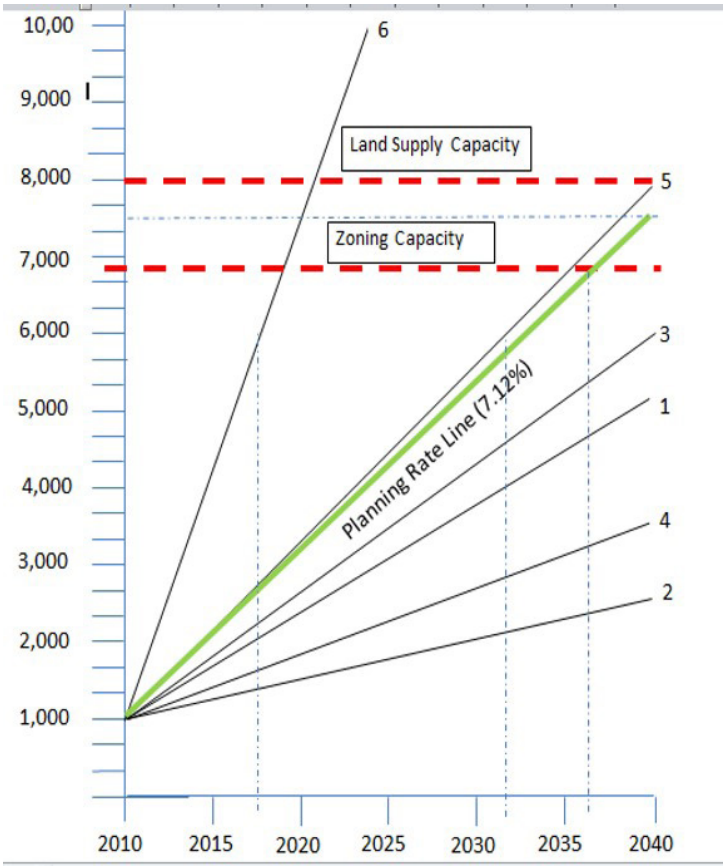


Figure 7: Growth Projection Chart

population growth is the real population issue for this Town. Discussion of the relationship between growth rate and holding capacity is presented in Population Issue #2 (page 12). It is the determination of the Planning Team that the Planning Growth Rate considers all the growth-rate-significant dynamics of the north central Metroplex, the Westlake region, the five city context, the corridor effect, NCTCOG projection, and the Town's own history.

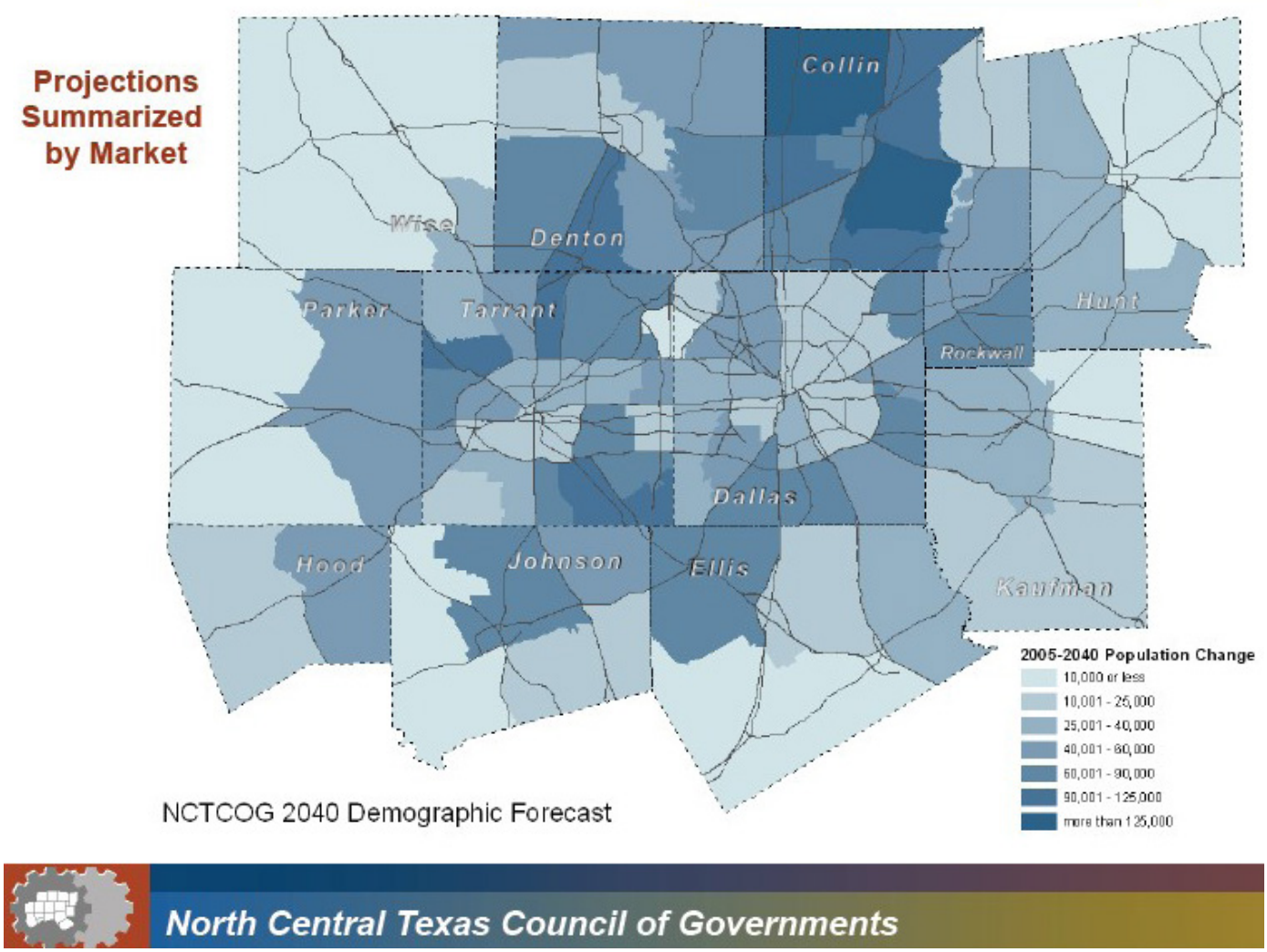


Figure 8: NCTCOG Projected Pop. Growth

The Planning Rate of 7.12% is, therefore, the population projection basis for this planning effort and will yield a population of 7,500 people by 2040. This is only 600 people less than what was projected by NCTCOG.

Figure 8 illustrates the distribution of NCTCOG projected population growth by 2040. Note that the area of Westlake, Roanoke, and Trophy Club are among those areas receiving a greater portion of overall population growth. Population growth in this area will increase more than 125,000 people. This supports the notion of attributing a greater rate potential for Westlake. Referred to as the Alliance North Fort Worth Area, it is one of the target growth centers identified by NCTCOG.

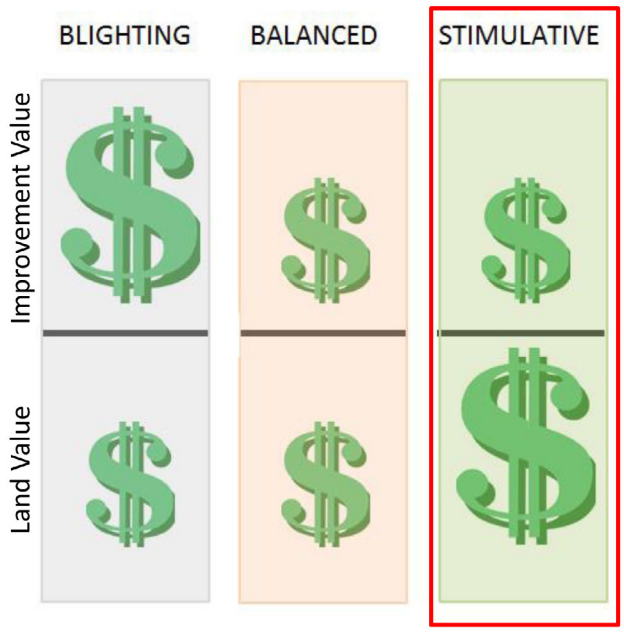


Figure 9a: Stimulative Effect

Population Issue #2: The Conflict between Growth Rate and Build-Out Capacity
Once the 2040 population projection has been determined, a special consideration particularly important to Westlake emerges: the point at which Westlake's population growth runs up against Westlake's capacity to hold population. This point of convergence between capacity and in-migration is significant to the Westlake Comprehensive Plan because of four factors:

Inversion of Land to Improvement Value Relationships: The conventional wisdom of the market place says the value of an improvement, or structure, generally responds to the value of the land upon which it sits. Therefore, one will not find a speculative office building in a corn field but rather in an urbanized area where the value of land reflects the market potential of the location (i.e., proximity relationship). This is best illustrated by Figure 9a. In this figure, the numerator is the improvement value and the denominator is the land value. In the left most set of dollar signs, the numerator (improvement) is greater than the denominator (land value). This is the situation seen in much of South Dallas where dwindling land values has led to deferred maintenance and absentee ownership. This relationship is labeled as "blighting" because the pressures of improved value (reflective of market desirability) are not present. The right most set of dollar signs (Stimulative) reflects what could happen in Westlake when growth approaches the capacity limits: in-migration (demand) is limited by capacity (supply) and there is a pressure for the denominator (land value) to rise. At some point, it exceeds a normative relationship to improvement value and triggers interests in redevelopment. This is just what has been happening in Preston Hollow for the past 10 years: rising land values have triggered the redevelopment of lots with much larger, more expensive homes. When a stimulative situation exists, a town or place is in "transition" whether physical development is occurring or not and is, therefore, basically unstable. The middle set of dollar signs (balanced) is actually a theoretical condition as the dynamics of an economy move through balance between the right and left extremes. To remain in balance is a condition of "stasis", something that a vibrant economy cannot sustain without becoming dormant.

While movement through a point of balance is unavoidable, the extremes of its swing is what the Plan should endeavor to limit, as seen in Figure 9b. When the denominator expands too aggressively, it becomes unstable, a "bubble", in market terms. Driven by speculation, this became the international condition pre 2008. Banks observing the instability of a rapidly increasing denominator and its burden of greater risk sought to diminish the denominator by transferring a portion of that risk through derivatives. After 2008, when the denominator began to aggressively shrink and government

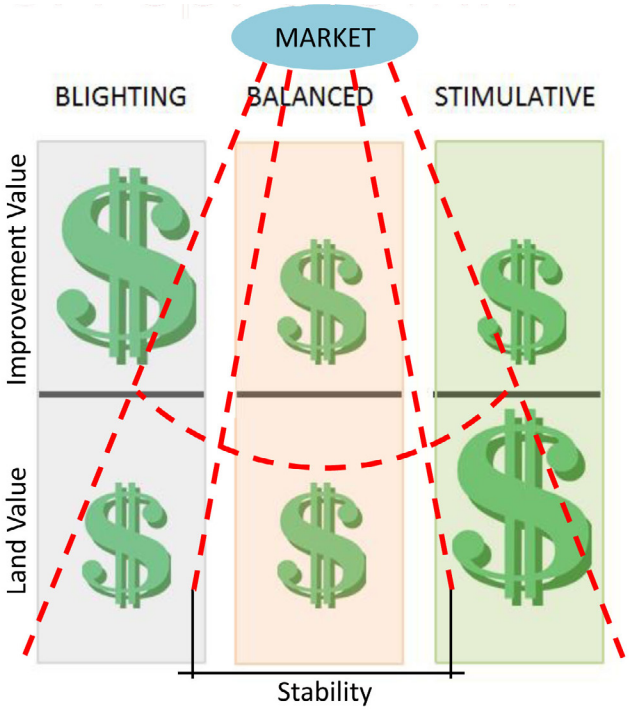


Figure 9b: Stability Effect

saw the growing risk of financial failure, government sought to stabilize the effects of such shrinkage with TARP. For Westlake, approaching the capacity line with population growth in a market where that growth demand well surpasses capacity causes the forces of speculation to become activated and a stimulative condition emerges. This condition has the potential to become a bubble, only worsening the instability of a stimulative environment. The ultimate expression of speculation and a stimulative condition is redevelopment.

Redevelopment/Infill-Development Management over Growth Management: Redevelopment/Infill-development is a much different issue than growth management of yet undeveloped land. For the foreseeable future the issues of growth also engage reconciliation of the existing entitlements in such a way that a coherent township emerges. However, depending on which growth rate is ultimately applicable, Westlake could find itself approaching capacity in a very few years and, thereby, confronted with issues related to redevelopment and infill-development. These issues include:

- **Participation of local government:** Typically, the complexities of redevelopment/infill-development require greater participation of local government. Such involvement ranges from various public/private partnerships to revision of standards that apply to the preceding condition. The many issues surrounding development within an existing built fabric call for greater oversight, regulation, and, where desirable outcomes need to be incentivized, participation.
- **Adjacency and design more than land use:** Redevelopment is development that replaces and/or reuses existing development, while infill-development is development on remnant land parcels within the existing built fabric. Each of these undertakings brings new construction of typically higher use, thereby responding to appreciation of underlying value in close proximity to lesser use. Therefore, design and transition become significant to a successful coexistence. One early sign of infill-development and increasing land value is a tendency toward smaller lots. Smaller lot developments can be a benefit to Westlake providing potentially needed housing options, but the design and price point of the development is critical. The Caruth Home Place, located east of US 75 and fronting the north edge of Southwestern Boulevard (northern edge of University Park), is an infill development that complimented the existing community and affirmed its value. Design has great impact on how a city manages growth.
- **Managing transition over managing growth:** As stated above, managing transition involves greater management of design and calls

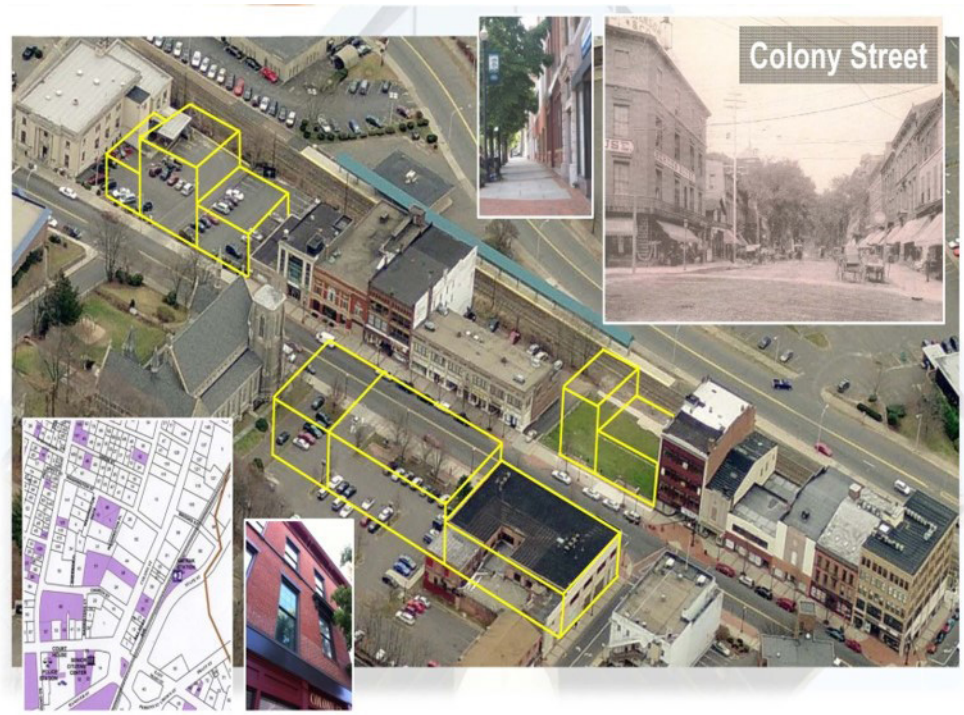


Figure 10: Redevelopment/ Infill-Development

upon the regulators to be equipped to undertake such a task. The primary issue of redevelopment and infill-development is its potential to trigger wholesale change, which then impacts the marketability of existing land use. Therefore, the challenge is to manage change in a way that preserves stability. Management of growth has much to do with land use and implementation of standards that are related to the project, internally. However, management of redevelopment and infill-development involves implementation of standards that are related to the projects external effects. It also requires greater creativity in addressing issues of adjacency because, while the greenfield has abundant space to establish large setbacks, etc., the redevelopment/infill-development project has less space to work with and must achieve the same results through creative use of the edge envelopes.

- **The need for redevelopment/infill-development management tools and a redevelopment plan:** The greater importance of design means that the Town will ultimately need design tools to facilitate its oversight work. In addition, it will need new ordinance vehicles to codify these design standards. Most important, the Town will shift from simple land use to creation of a redevelopment plan. This plan will identify areas where redevelopment is appropriate and where infill-development is likely to happen. By such designation, standards are then applicable to redevelopment/infill-development activity.

Greater accountability for decision process: In a condition where the land supply is limited, demand is strong, and land values are rising, the cost of failure in the entitlement process becomes significantly greater. Also, the cost burden of going through the entitlement process

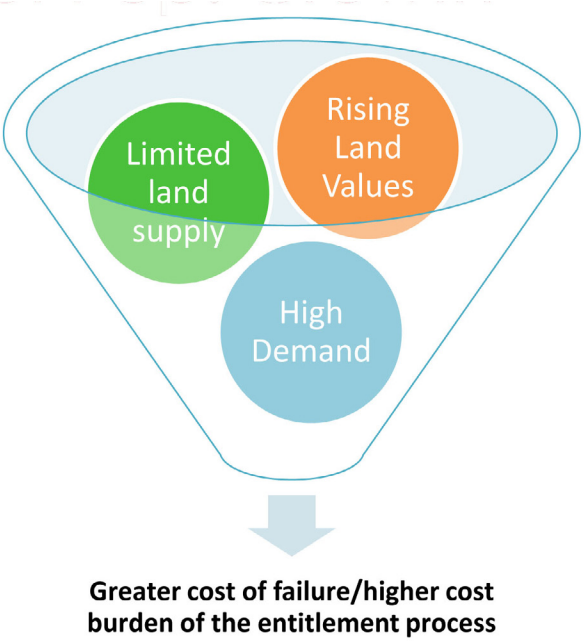


Figure 11: Accountability

Figure 12: Service Demands

is greater. Therefore, attention on the process, itself, becomes acute. In Dallas, most zoning matters are handled by attorneys representing the applicant, instead of the owner/developer. This has led to significant change in how zoning matters are handled within Town Hall and has prompted the creation of more expeditious processes, more binary standards, and more in-depth application review. As Westlake approaches its holding capacity, such changes to existing processes will be required for all the reasons mentioned above.

Service demands of use versus service demands of resident population: Most of the above observations relate to absorption of the residential land. However, as the economy improves and the rapid growth projected for the Westlake region reaches a critical mass, the Circle 'T" commercial property is very likely to develop. When one considers the other optional retail locations, it is clear that the Circle 'T" location is prime. Figure 12 shows the five critical intersections west of Solana Boulevard. Intersections labeled with an "A" are the ones that serve Circle 'T" and are equipped with cross over structures, entitlement, and land supply. Intersections labeled "B" and "C" are spatially constrained. While they will have some amount of retail in the future, it will be more limited in terms of total square footage. Intersection "D" is consumed with periodic traffic issues related to the speedway, and land in that location is slated for hotel development over retail. Finally, intersection "E", owned by the Perot Company, will, except for the Cabelas and other present retail, likely be retained to support the primary industrial purpose of Alliance. For this reason, Perot Company has taken one of its four intersection sites as a truck stop. In light of this quick assessment, it is likely that the Circle "T" property will develop significant commercial square footage to serve the emerging market and, as a result, import a

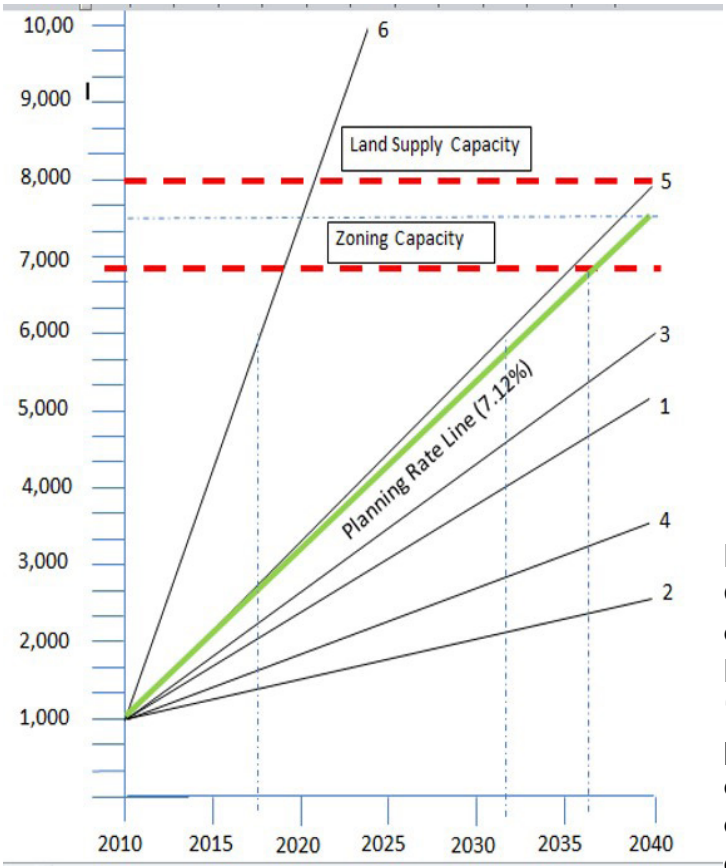


Figure 13: Growth Projection Chart

great deal of vehicular traffic and daytime populations to Westlake. The service needs of this day-time population become a potential cost burden to a residential ad valorem base , which is limited by land area that is relatively small compared to the amount of non-residential land area.

Figure 13 identifies two capacity limits that can set a ceiling on residential in-migration. These capacity limits are:

- **Capacity set by existing entitlement (Zoning Supply):** Considering the zoning in place and the entitlements conveyed by the Town's four Planned Development Ordinances, the residential capacity of Westlake is 2,253 households and 6,927 people at 3.28 (SF) and 1.9 (MF) persons per household. The next section, Existing Conditions, has taken that information and converted it to residential units and development square footage. Through this process, a total number of units is identified.
- **Capacity set by land area (Land Supply):** Assuming that existing zoning could be adjusted over time, the land area of Westlake becomes its ultimate capacity determinant. Assuming that retail entitlements remain and that office entitlements on interior properties may be converted to residential use, the land supply holding capacity at 3.28 units per acre would be 2,046 households or 7,747 people.

Note that by applying the Planning Growth Rate of 7.21%, Westlake hits its capacity line of 6,927 people by 2036. However, giving greater weight to the "corridor effect" (as discussed in the previous section) could place Westlake at the threshold of its capacity much earlier (at an 8% growth rate, capacity of 6,927 would be encountered by 2035). Therefore, attaining capacity is a planning issue flowing from population growth projections.

Population Issue #3: Internal Pressures of Regional Growth.

When considering the future population projection of Westlake, it is important to consider it in relationship to the population of surrounding communities. This is important because Westlake resides in a very dynamic growth context that will impact the Town physically as a result of the increased service demand, traffic, value fluctuations, and daytime populations such growth drives. There are four population settings that merit consideration. These are:

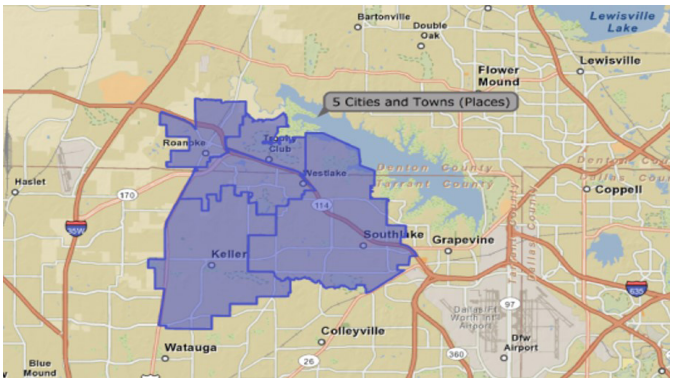


Figure 14: Internal Pressures, Four Surrounding Cities

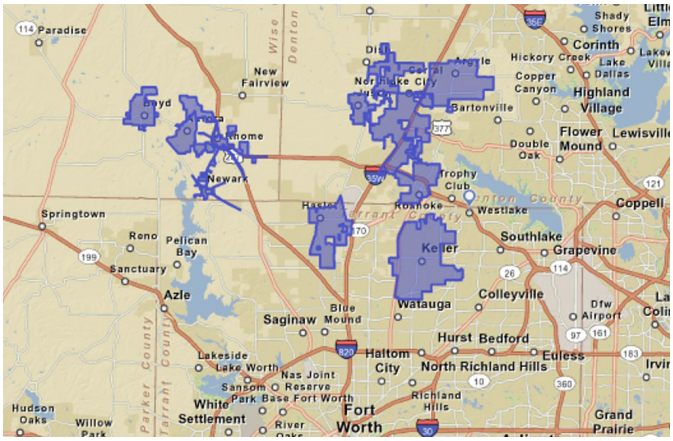


Figure 15: Internal Pressures, Westlake Upstream Region

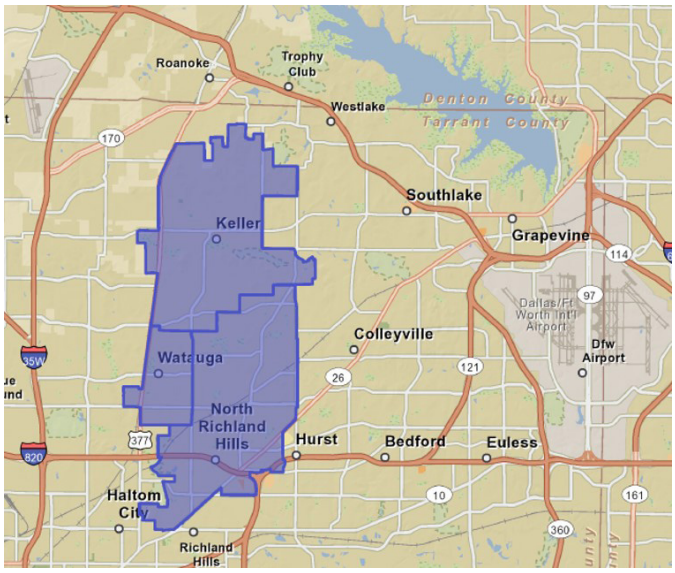


Figure 16: Internal Pressures, Regions Accessing 114

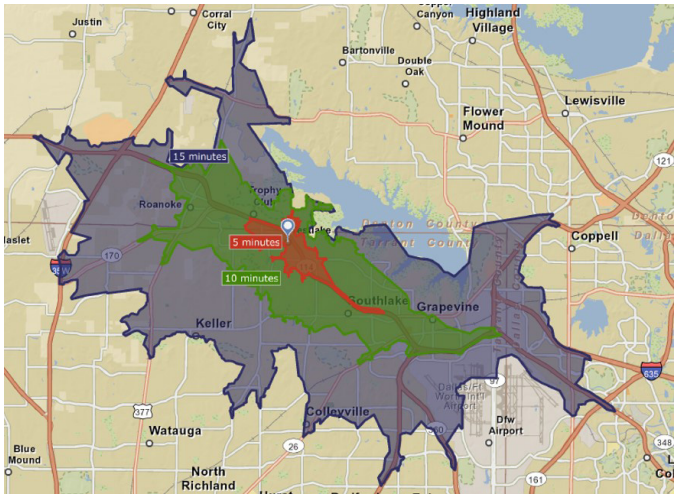


Figure 17: Internal Pressures, 15 Min. Retail and Commuter Drive Zone

- **The Four Surrounding Cities:** This setting considers the population touching the edges of Westlake and includes Southlake, Trophy Club, Roanoke, and Keller, as seen in Figure 14.
- **The Westlake Upstream Region:** This setting considers the cities and townships that are west of Westlake served by SH 114. These are growth areas that will eventually define Westlake's retail and commercial hinterland. This area includes Roanoke, Haslet, Newark, Corral City, Argyle, Rhome, Justin, Keller, Ponder, and Northlake, as seen in Figure 15.
- **Regions Accessing SH 114:** This setting considers the communities south of Westlake that must flow through Westlake to SH 114 and retail fronting SH 114. This area includes Keller, Watauga, and North Richland Hills, as seen in Figure 16.
- **15 minute Retail and Commuter Drive Zone:** This setting considers growth areas that lie within areas that are within a 15-minute drive to the center of Westlake. The center of Westlake is set at Westlake Town Hall. This zone extends more to the east and west than to the north and south because of the driving time advantage afforded by SH 114, as seen in Figure 17.

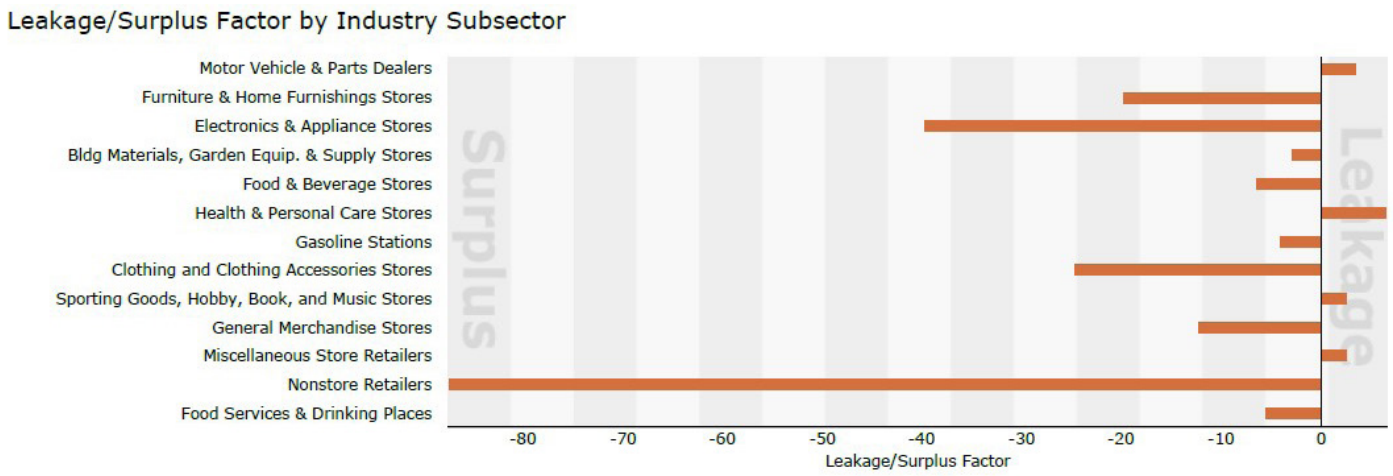


Figure 18: Leakage Chart

Figure 18 illustrates that there is rapid and expansive growth in each of the above population settings, meaning that Westlake, with its projected small population of nearly 7,000 people, is the focal point of a considerable population center. More specifically:

- **The Four Surrounding Cities:** The four cities surrounding Westlake will hold a combined population of 215,801 people by 2040. This population physically surrounds the commercial center defined by combined Planned Development District entitlements in Westlake, which collectively convey rights to more than 18 million square feet of non-residential development, including hotels. Westlake is the commercial center of an urban/economic organ containing approximately 220,000 people when considering the mechanical integration of this area through shared roads, infrastructure, and economic transaction rather than political boundaries of individual cities. Compare this to other single jurisdiction cities with a similar population. Such cities in Texas include Laredo (244,731), Lubbock (236,065), Garland (233,564), and Irving (225,427). Because of the commercial aggregation within, and structural integration of, this five city area, including Westlake, faces truly urban issues as it matures. Commercial aggregation and structural integration means that adjacent population will:
  - Use Town roads
  - Use Town parks and open spaces
  - Place potential demand on emergency services
  - Require capital project investment to service needs

  If Westlake chooses to remain "small" in terms of the appearance of it roads and openness of its landscape, it will face the same challenges that Highland Park faces as Dallas grows around it. Maintaining a small scale road capacity and/or limiting the road system to a few main roads will cause dramatic level of service increase at the few outlet points serving the Town (see Circulation Analysis). Part of the "smallness" that residents currently enjoy is a fluidity of service at intersections. Presently intersection service levels are "C" or better.

- **The Westlake Upstream Region:** The largely undeveloped upstream region can grow rapidly over the next 27 years and attain a potential population of 220,826 people. Except for Keller and Roanoke, many of the cities

comprising this setting are outside the "Four Cities" setting (described above) and, thereby, raise the total population impinging Westlake to right at 300,000 people. This is a significant tributary population and further adds to the burdens that the small residential population (but dense commercial aggregation) the Town of Westlake will bear.

- **Regions Accessing SH 114:** The largely developed cities and townships south of Westlake along primary arterials running through Westlake, such as Precinct Line Road, will potentially attain a population of 219,184 people. These cities and townships will use the roads running through Westlake to access SH 114 and the many retail/ employment destinations along the way. Most of these people will live in Keller, but the two cities further south than Keller and using Westlake arterials to access the SH 114 corridor will add another 94,000 people to the 300,000 mentioned above bringing the total population that uses and flows through Westlake to nearly 400,000 people.

- **15 minute Retail and Commuter Drive Zone:** Of all the population settings discussed in this analysis, the 15 minute drive-time window is perhaps the most significant. The national average commuting time is 23 minutes. Therefore, commute times within this 23 minute range would lead potential employees and corporate officers to live somewhere in the 15 minute drive-time area if their work place were located in Westlake and can be viewed as population absorbing commercial space in Westlake. In addition, people living within this drive-time window will be the primary shoppers patronizing retail establishments in Westlake. There will potentially be 296,000 people living in this area by 2040. The potential population tapestry segments that describe this population (discussed in the following section) suggest that the median household income will be nearly $100,000.00, making this emerging population concentration (presently underserved by retail in the general window area) a determinant for locating retail uses in Westlake. Therefore, the 296,000 people living within the 15 minute drive-time window will substantially supply the workforce and shopping population that will also be in Westlake for significant time periods each day.

  Assuming that the 2040 population will look a lot like the 2013 population in terms of age distribution, 48% of these 296,000 people (142,000 people) will be between the age of 20 and 60 years old and, therefore, possible participants in the workforce. Because the population resides within a commute distance that is clearly less than the national average and because the population tapestry segment analysis below suggest that 91% of this population is employed in management, professional, sales, and white collar jobs, they are likely candidates to work in Westlake's office centers. If we assume that 40% of the 142,000 could work in offices located in Westlake, the Westlake workforce contribution flowing from the 15 minute drive-time window is 56,000 people. At 300 square feet per person, this workforce could absorb all the office entitlement now granted by the Planned Development Ordinances of Westlake (13,314,980 square feet). The actual employment capacity of the commercial entitlements is 37,000 people.

The 15 minute drive-time window population will potentially meet this threshold by 2032 (when populations are compounded annually at historic U.S. census growth rates).

From a retail perspective, the 15 minute drive-time window experienced $4.4 billion in retail sales in 2012, while the retail sales potential of the area's population (145,960 in 2012) represents $2.3 billion dollars. This means that there was significant importation of retail sales during 2012. Using the retail potential of $2.3 billion and a population growth potential by 2040 of 295,521 people, the possible 2040 retail potential could be $4.6 billion. That is a growth of $2.3 billion over the next 27 years; such sales volume could support approximately 9.2 million square feet of retail space. The 3.1 million square feet of retail space granted via the Planned Development Ordinances of Westlake represents a safe 33% of that growth market. This means that the drive-time population growth could easily absorb the retail square footage established by its Planned Development Ordinances.

Figure 18 illustrates the sales surplus (imported sales) and leakage within the 15 minute drive-time window.

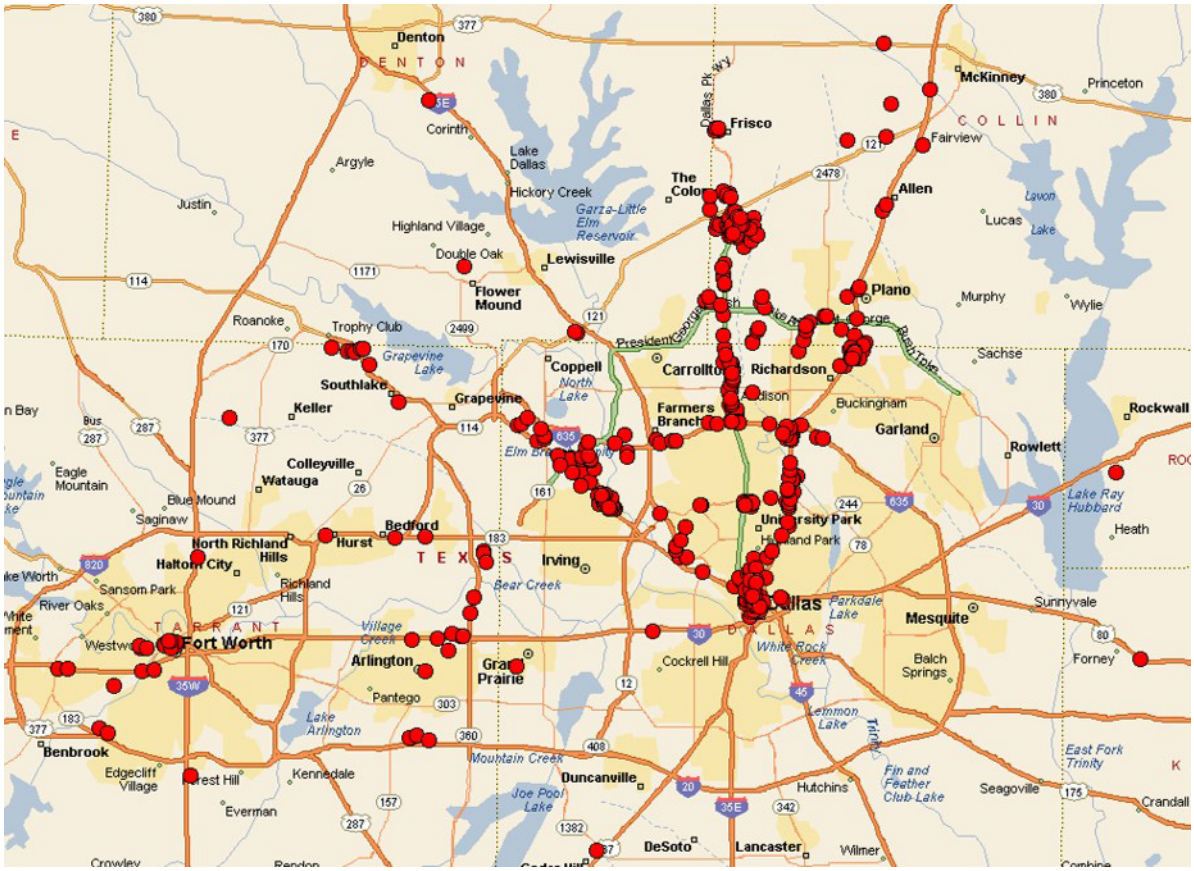


Figure 19: Dallas MSA Class A Office Buildings

Dallas MSA Class A Office Buildings

Recent growth in Class A office space has largely followed major transportation corridors leading to executive households. In particular, areas north of Loop 635 along the Dallas North Tollway, shown in Figure 19, have seen significant growth in Class A office space as executive housing has emerged in cities such as Plano, Frisco, Prosper, and The Colony. To the northwest of Dallas, Las Colinas has emerged as a major employment hub, providing accessibility to executive households via SH 114.

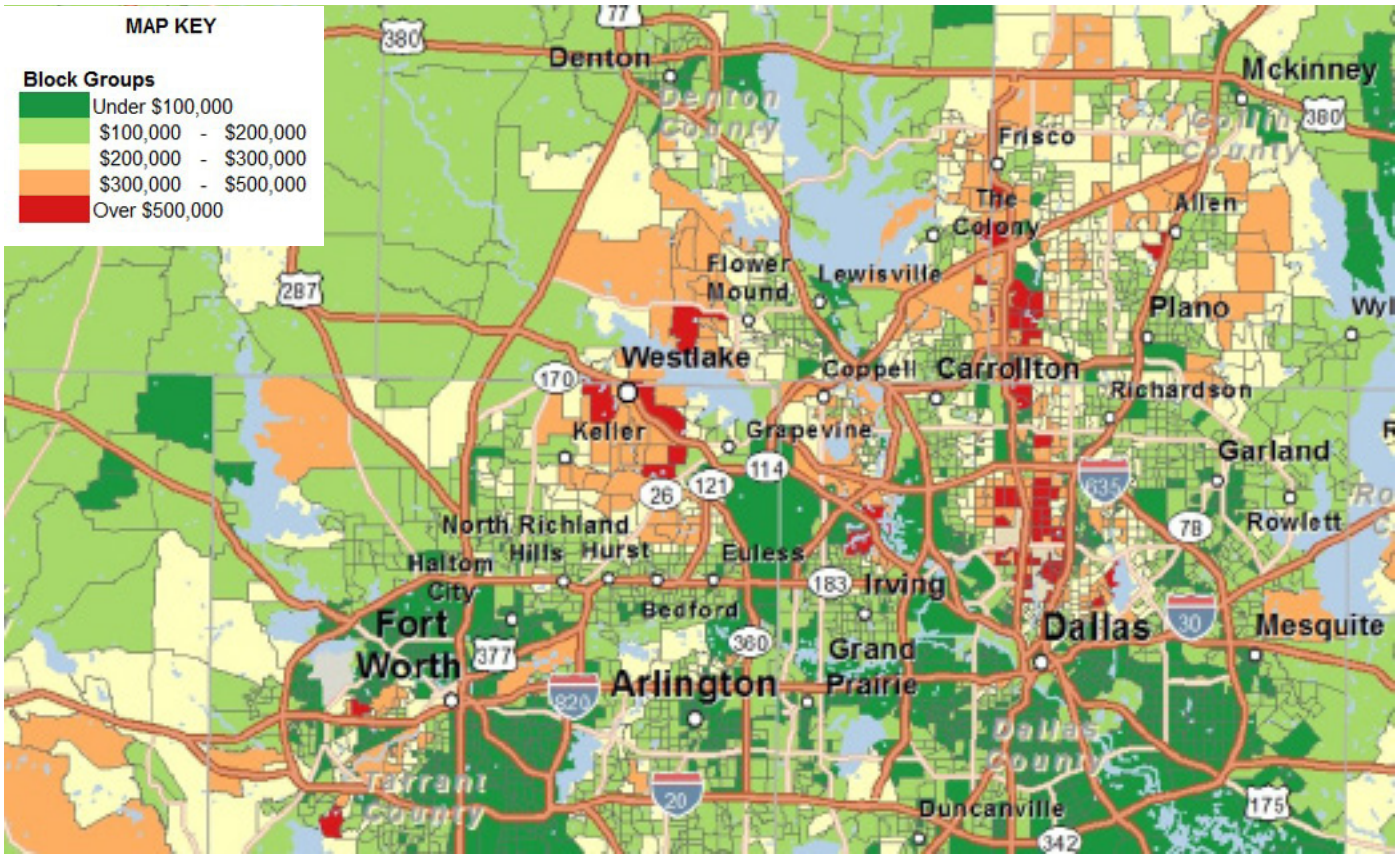


Figure 20: Metroplex Executive Housing Corridors

Metroplex Executive Housing Corridors

Figure 20 illustrates where executive housing corridors have emerged outside of Loop 635 as affluent households continue to prefer areas with strong schools and access to employment. The area north of Loop 635 along the Dallas North Tollway represents the most robust growth corridor, garnering a large share of executive household growth over the last three decades. The Westlake area represents another executive housing concentration; the area's strong schools and access to employment located along SH 114 will continue to draw affluent households to the area. Likewise, additional employers will likely be drawn to the area as the concentration of executive households continues to grow.

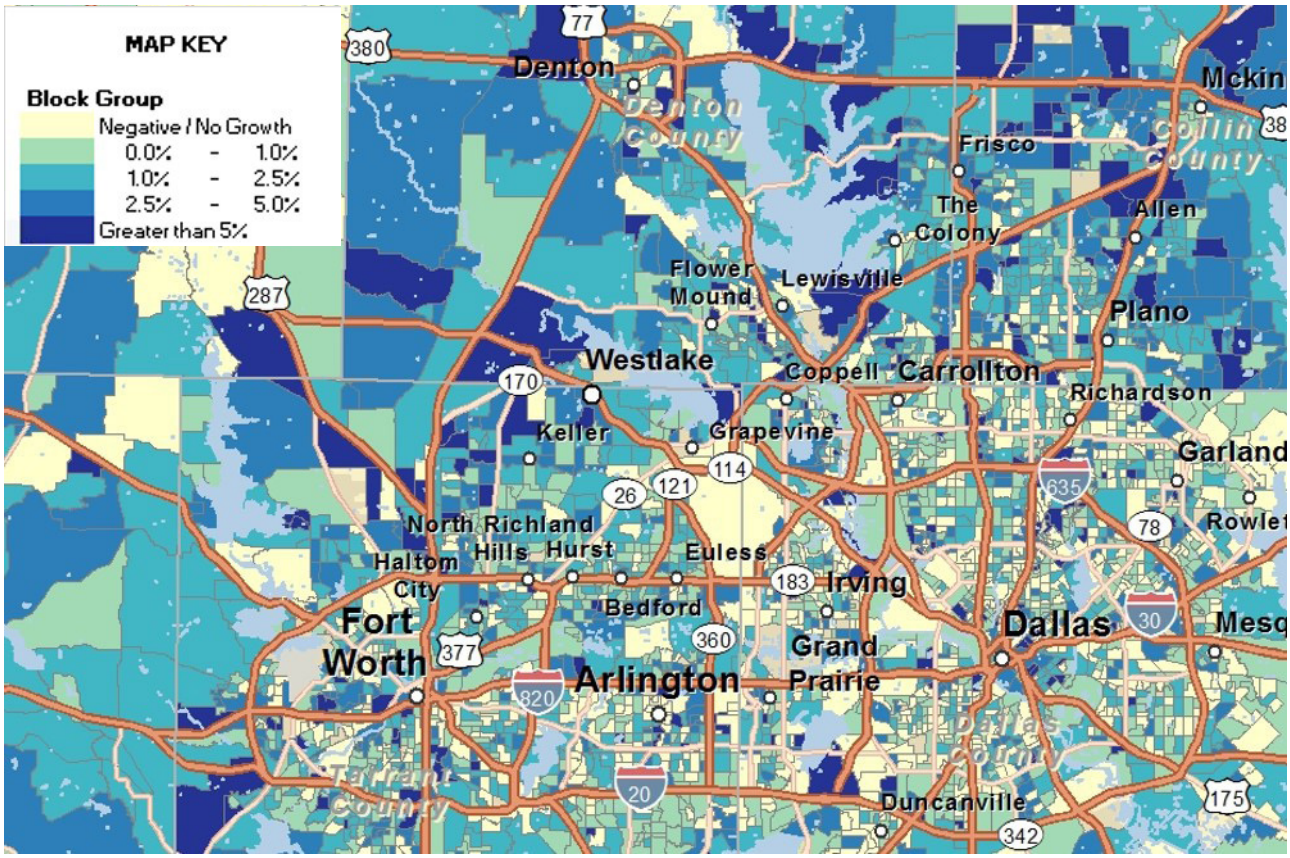


Figure 21: Metroplex Household Growth

Metroplex Household Growth

Suburban areas have exhibited the strongest growth rates over the last three years. Areas like the SH 114 Corridor, with ample development opportunities, well-performing schools, and strong access to employment, are likely to continue garnering much of the household growth in the Metroplex. Areas to the west, such as Roanoke, and areas to the north, such as Flower Mound, have also experienced significant growth in recent years. Refer to Figure 21.

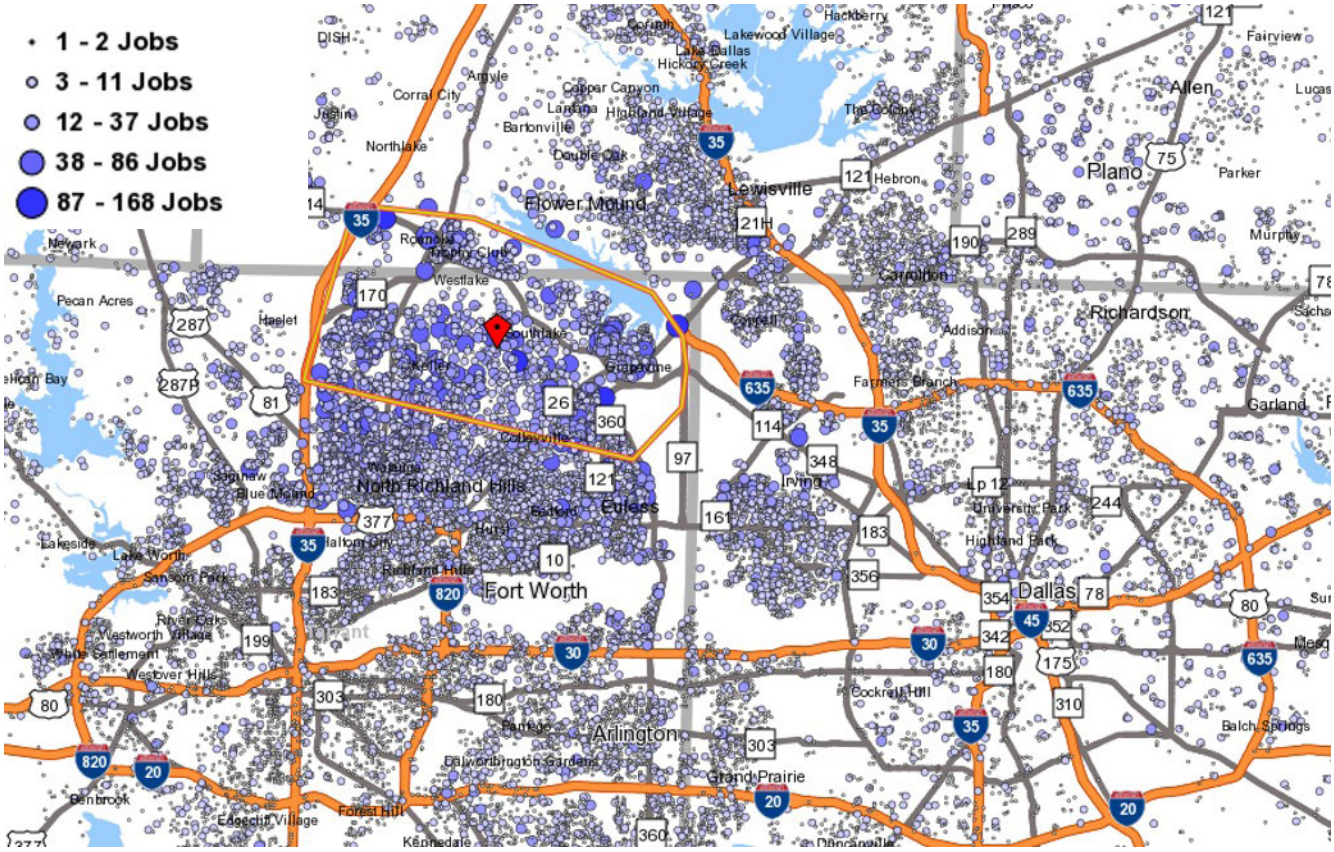


Figure 22: Westlake Area Employees' Commuting Patterns

Westlake Area Employees' Commuting Patterns

Based on 2011 Census data, employees who work in the Westlake area mostly live in areas north and northeast of Fort Worth. About 20% of commuters live in the Towns of Euless, Southlake, North Richland Hills, Grapevine, Keller, and Irving, with 17% of commuters living in the City of Fort Worth. Overall, about 17% of commuters live in the City of Fort Worth. With ample development capacity in the Fort Worth area, along with areas north of Westlake that are largely undeveloped, office development in Westlake is likely to continue. Refer to Figure 22.

Employment by Industry

Figure 23 shows that 60% of Primary Market Area employment is concentrated in three industries. The first is Trade, Transportation, & Utilities, accounting for 25% of area employment, compared to 21% for the Metroplex. This higher proportion is likely due to the presence of Alliance Texas. The second industry is Professional Services, accounting for 21% of total employment, compared to just 19% for the Metroplex. The third industry is Financial Activities, accounting for 12% of total employment, compared to just 8% for the Metroplex. Continued growth in these industries will support new office development in and around the Westlake area.

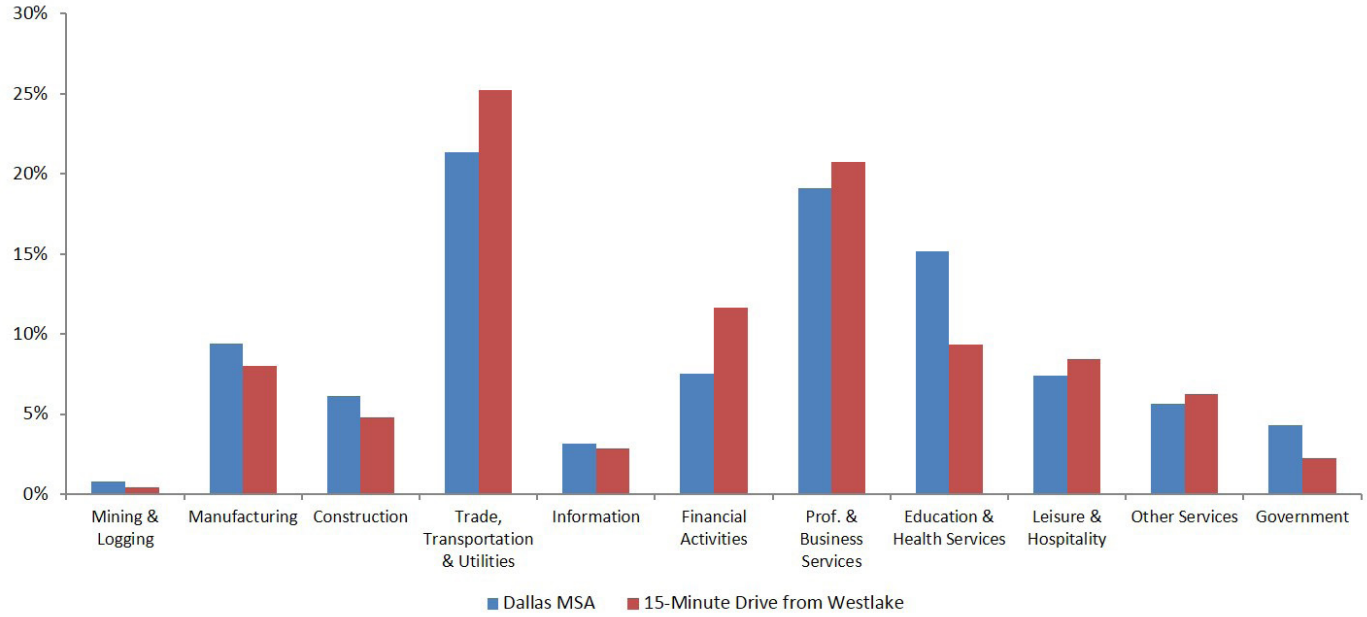


Figure 23: Employment by Industry

JOB CENTER	OFFICE SPACE IN JOB CENTER (SF)	HOUSEHOLDS WITHIN 20-MINUTE DRIVE	OFFICE SPACE WITHIN 20-MINUTE DRIVE	OFFICE SPACE PER HH WITHIN 20-MINUTE DRIVE (SF)
Legacy Business Park	14,061,579	248,057	64,558,330	260
Las Colinas	19,785,061	108,318	52,073,148	481
Westlake Area	2,546,644	55,441	8,750,865	158

Figure 24: Comparison Chart

Job Center Statistics

Large suburban job centers have emerged outside of Loop 635 with the Legacy Business Park and Las Colinas representing two of the largest suburban job centers in the Metroplex. Similar to Westlake, the Legacy Business Park is located 30 miles outside of Downtown Dallas. If Westlake begins to resemble the Legacy Business Park's 260 square feet of office space per household within a 20-minute drive, this would imply growth of almost six million square feet of office space. Further executive household growth along the SH 114 Corridor and areas north of Westlake will lend further support to additional commercial land uses, bringing an increasing amount of commuters and visitors to Westlake. With the area within a 20-minute drive from Westlake projected to have as many households as the area around Legacy Business Park, a massive commercial concentration is likely supportable given the area's transportation access and visibility. Refer to Figure 24.

Population Issue #4: The Effects of Dominant Tapestry Trends

Population tapestry is a "Segmentation System". Segmentation Systems operate "on the theory that people with similar taste, lifestyles, and behaviors seek others with the same tastes – Like seeks like" (Tapestry Segmentation Reference Guide by ESRI). According to ESRI, these behaviors can be measured, predicted and targeted. The exploration of dominant Tapestry Segments presented below uses the ESRI Tapestry Segmentation System that "combines the 'who' of lifestyle demography with the 'where' of local neighborhood geography to create a model of various lifestylesegments of actual neighborhoods".

The ESRI Tapestry Segmentation System has 65 market segment classifications that classify US neighborhoods based on their socioeconomic and demographic compositions. These classifications use available census and other variables (derived through sophisticated data mining techniques) that can distinguish consumer behavior from household characteristics, such as income and family type, to personal traits, like age, education, employment, and even housing choices. According to ESRI, the Tapestry Segmentation System classifies US neighborhoods (census block groups) according to the above mentioned 65 market segments, and "neighborhoods with the most similar characteristics are grouped together, while neighborhoods with divergent characteristics are separated". To facilitate quick analysis of these segment distributions, the 65 market segments are combined into 12 "LifeMode Summary Groups" based on lifestyle and life stage.

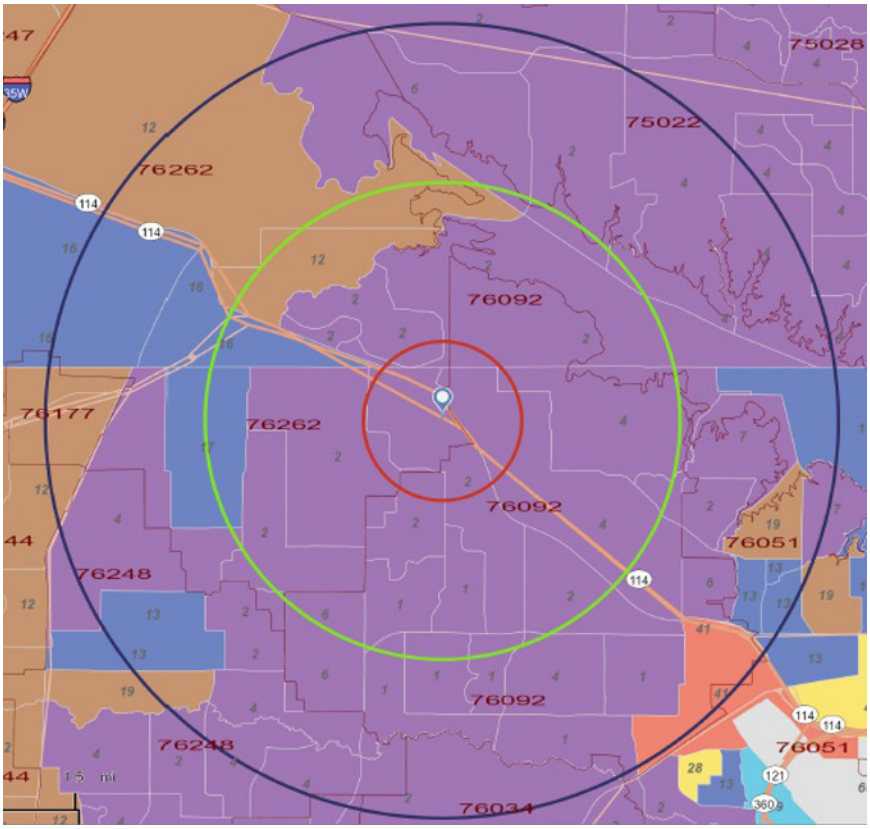
Tapestry Segment designations have proven to be stable despite significant demographic changes in the US population. Among the significant demographic changes since Census 2010 are:

- The US population has increased by two million people,
- More than 740,000 households have been created, and
- Half a million people have become homeowners.

Lynn Wombold, chief demographer and management of data development at ESRI, states that "although the demographic landscape of the United States changed significantly since Census 2000, [the] review and update of the segmentation system further confirms the stability of the Tapestry Segmentation System as some neighborhoods evolved and moved into other segments".

The Tapestry Segment information analyzed in this section is the same data used by business marketing firms as they seek to understand consumer types, shopping patterns, product and media preferences, and customer retention. This data system is used for media targeting, direct mail, site location analysis, and customer profiling.

Figure 25 shows the Tapestry Segmentation Summary Groups generally present in the Westlake area. This slightly larger view of Westlake is presented here because much of present day Westlake is undeveloped. However, because of the nation-wide tendency of segment classifications to cling together, it can be reasonably projected that the segments within Westlake are and will be "Suburban Splendor" and "Boomburb". Figure 25 shows the following Tapestry Segmentation within a 1 mile, 3 mile, and 5 mile radius of Westlake.



One Mile Radius
- #2, Suburban Splendor
- #4, Boomburb

Three Mile Radius
- #2, Suburban Splendor
- #4 Boomburb
- #1, Top Rung
- #12, Up and Coming Families
- #6, Sophisticated Squires
- #17, Green Acres
- #7, Exurbanites

Five Mile Radius
- #2, Suburban Splendor
- #4, Boomburb
- #1, Top Rung
- #13, Instyle
- #12, Up and Coming Families
- #16, Enterprising Professionals
- #19, Milk and Cookies
- #6, Sophisticated Squires
- #7, Exurbanites

Figure 25: Tapestries 1-5 mile radii graphic, legend

In order to better understand what these designations mean in terms of demographic characteristics. The Tapestry Segments identified above can be grouped into "Life Modes" summary groups, each with distinct demographic characteristics as follows (using descriptions from ESRI):

- **LifeMode: High Society (comprised of segment groups 1, 2, 4, 6, and 7):** Residents of the "High Society" neighborhoods are affluent and well educated. They represent slightly more than 12 percent of all U.S. households but generate nearly one-quarter of the total US income. Employment in high paying positions, such as professional or managerial occupations, is a primary reason why the median income for this group is $100,216.00. Most households are married couple families who live in affluent neighborhoods. Although this is one of the least ethnically diverse groups in the Unites States, it is one of the fastest growing, increasing by more than two percent annually since 2000. Residents of High Society are affluent and active – financially, civically, and physically. They participate in a wide variety of public activities and sports and travel extensively. Use the internet or radio instead of television to reach these markets.
- **LifeMode: Upscale Avenues (comprised of segments 13, 16, and 17):** Prosperity is the overriding attributes shared by the three segments in Upscale Avenues. Residents have earned their success from years of hard work. Similar to the High Society Segments, many in this group are also well educated with above-average earnings. However, their housing choices reveal their distinct preferences. Urban markets (referring to segments that make

up the Upscale Avenues Life Mode) such as "Urban Chic" and "Pacific Heights" favor townhouses and high-rises; "Pleasant-Ville residents prefer single-family homes in suburban neighborhoods; "Green Acres" residents opt for open space. Some have not settled on a home yet, such as renters and comfortable residents among "Enterprising Professionals"; others, such as "Cozy and Comfortable" residents, have been settled for years. The median household income is $65,912.00. Prosperous domesticity also characterizes the lifestyle in Upscale Avenues. They invest in their homes; the owners work on landscaping and home remodeling projects; the renters buy new furnishings and appliances. They play golf, lift weights, go bicycling, and take domestic vacations. Although they are partial to new cars, they save and invest their earnings.

- **LifeMode: Family Portrait (comprised of segments 12 and 19):** Family Portrait has the fastest growing population of the LifeMode Summary Groups, driven primarily by the rapid increase in "Up and Coming Families" segment. Youth, family life, and the presence of children are the common characteristics across the five markets in Family Portrait. This group is also ethnically diverse; more than 30% of the residents are of Hispanic descent. The neighborhoods are predominantly composed of homeowners who live in single-family homes. Most households include married couples with children who contribute to the group's large household size, averaging more than 3.09 persons per household. Their lifestyle reflects their youth and family orientation: buying infant and children's clothing and toys and visiting theme parks and zoos.

In addition to LifeModes, one can see patterns of distribution in the Tapestry Segment distribution map (Figure 25) that are worth noting:

1. The **One Mile Zone** (centered by the Town Hall location) is dominated by the Suburban Splendor Tapestry Segment (85.7%). This means that 85.7% of the one mile households have the following characteristics:
   a. Predominantly white
   b. Half of the population is aged 35-64 years.
   c. The median household income is $115,369.00.
   d. Labor force participation rates are high for both men and women; many households are two income.
   e. Generally, salaries are supplemented with incomes from interest, dividends, and rental property at a rate much higher than the national level.
   f. Well educated, more than half of the population aged 25 years and older hold a bachelor's degree or graduate degree.
   g. Home ownership rate is 92% with 62% of the houses built after 1979.
   h. 85% of households own two or more vehicles.
   i. Generally residents are members of business clubs and are active investors, using the internet to track and trade their stocks, bonds, and funds. They hold home equity credit lines, consult with financial planners, use stock ratings services, and own life insurance policies valued at approximately $500,000.00. They shop at upscale retailers, home stores, and wholesalers. They order items over the phone and shop on-line for equipment.

This segment dominates the One Mile Zone and is 54.3% of the Three Mile Zone and drops to only 25.9% of the Five Mile Zone.

2. While the Boomburbs Segment is only 14.3% of the **One Mile Zone,** it is 17% of the **Three Mile Zone,** and rises to 22% of the **Five Mile Zone.** The Boomburg Segment has the following characteristics:
   a. Younger than the Suburban Splendor Segment, with ages generally between 35 and 44 years.
   b. The median household income of $104,395.00 is slightly less than the Suburban Splendor segment but is still double that of the U.S. median.
   c. Homeownership rate at 87 percent is higher than the national rate.
   d. Family vacations are a top priority; trips to Disney World, Sea World, and other theme parks are popular destinations. For exercise, they play tennis and golf, ski, lift weights, and jog. They will spend more than $250.00 a year on high end sports equipment and buy family DVD's for their collection.
3. Combined, the Suburban Splendor Segment and the Boomburbs Segment represent 100% of the **One Mile Zone,** 71.3% of the **Three Mile Zone,** and 48% of the **Five Mile Zone.** The 48% is significant in the **Five Mile Zone** because the remaining percentage is comprised of 8 segment groups, all with small shares of the total population.

The dominance of the Suburban Splendor and Boomburbs Tapestry Segments mean that the High Society LifeMode neighborhood type is, and will be, the dominant demographic characteristic of Westlake's growth. This is best illustrated in Figure 26, where flags identifying neighborhoods are dominated by the label "High Society". However, there is a segment just west of Westlake's center, labeled Upscale Avenues, suggesting a somewhat younger population desiring higher density housing options. In that most of this area is committed to commercial entitlement, High Society remains the dominant neighborhood type. Perhaps this area is designated for Upscale Avenues because of the pending commercial dominance. Another dynamic that reinforces the continued dominance of the High Society neighborhood type is supported by its robust growth nationally. As stated above, this group has been increasing nationally by more than two percent per year since 2000. In the Dallas Fort Worth Mertroplex that figure should be increased by the amount that the Metroplex growth rate exceeds the national growth rate. The national growth rate is 0.9% and the Metroplex (Dallas, Tarrant, Collin, Denton, and Rockwall counties) growth rate is 2.10%. Therefore, the 2.0% national average for growth of High Society neighborhood groups should be adjusted to 4.6% in the Westlake area. This is 69% of the Planning Growth Rate, suggesting that right at 70% of the future Westlake population will likely identify with the High Society LifeMode group (about the same representation within Westlake as now exists within the Three Mile Zone). The future dominance of High Society neighborhoods raises several important planning issues:

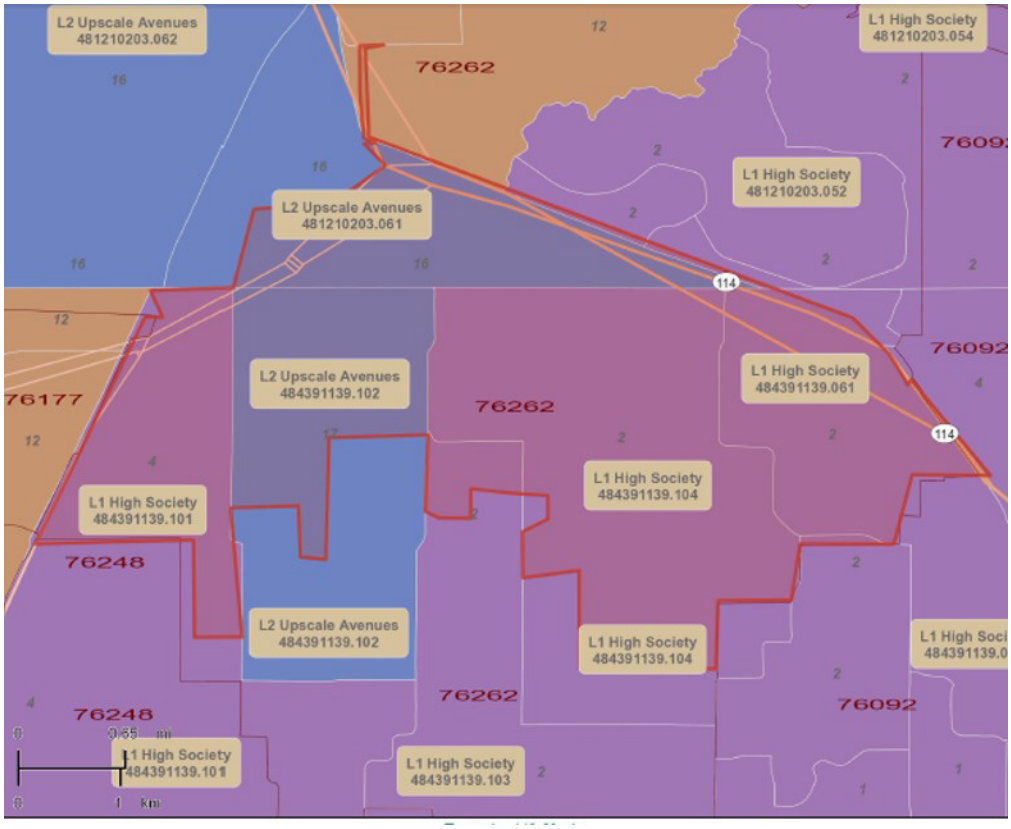


Figure 26: Tapestries High Society Neighborhoods

1. **Value Contextually Defined:** The high price point of houses for High Society neighborhoods are supported by contextual conditions that support such value. Like Highland Park, these include schools, close proximity of similar houses, community amenities, supporting institutions, sense of boundary definition, and uniform quality of design/ construction. To date, Westlake, sitting in a pastoral setting that defines it apart from more dense neighbors with Westlake Academy and well-designed communities (such as Vaquero Estates), offers sufficient context to support high value. This nurtures continued growth of the High Society neighborhood type. However, as Westlake fills in, it will likely encounter conditions that could augment that context.

2. **Commercial Effects:** The magnitude of commercial development proposed by existing entitlement could augment the contextual attributes that support high end residential value unless appropriate design measures are taken within the public domain to tie the two land use types together in an organic and meaningful whole. Remember that the ESRI Tapestry Map showed Upscale Avenues neighborhoods, not High Society neighborhoods, in the vicinity of the most-dense commercial entitlement.

3. **Edge Effects:** In areas south of Westlake (Keller) it is likely that Upscale Avenues neighborhoods will dominate, with a median income about half the projected Westlake median. Therefore, higher density, lower value housing will share an adjacency with the High Society neighborhoods. In such cases, attention to the public domain that separates them must be considered in order to sustain the contextual attributes that define value in Westlake. This is particularly true when streets like Pearson Road or Precinct Line Road become regional in identity and less associated with Westlake.

In summary, Westlake's projected population of 7,000 people will substantially reside in High Society neighborhoods (70%) mostly comprised of the Suburban Splendor Segment and the remaining 30% will flow to the alternative housing choices preferred by younger Boomburb Segments. Overall, Westlake will remain a high-income township if it is successful in preserving the contextual assets that support value. Otherwise, there could be expansion of Urban Avenues neighborhoods (mostly from the south) into the Westlake area.

Population Issue #5: The Effects of Population Issues on Westlake Academy

Both the dominant population tapestry segments that will comprise Westlake's future population and the magnitude of population growth within the Westlake region will influence Westlake Academy enrollment. More specifically these influences will likely be as follows:

Student Distribution as a Result of Dominant Tapestry Trends: The growth of student enrollment since 2000 is attributed to the growth in the number of school age children per household (18 in 2000 and 357 in 2010 according to data provided by SDS). Figure 28 puts the total number of children in Westlake at 357 with 58 of that number being nursery/ preschool/ kindergarten attendees. Therefore, the number of children available to Westlake Academy for enrollment in 2010 is 312 plus the small portion of the 58 that is in Kindergarten, making the total school age population of 306 identified by SDS, which is a reasonable estimate. Of that 306 people, only 146 are not in private schools, according to ACS, and, therefore, available for attending Westlake Academy. Again, this compares favorably with the Academy's 2010 census stating that Westlake Resident (WR) enrollment, excluding employee exemptions, is 139. It would be reasonable at this point to surmise that some of these 146 students will attend other public schools (Keller, etc.). Assuming that 15% attend other public schools, the WR enrollee potential would be 125. If one subtracts 125 from 139, the possible number of grandchildren in the mix is 14, which is about the same number of grandchildren reported by Westlake Academy in the 2013-2014 census.

Such a calculation illustrates that without recognizing the effect of the grandparent

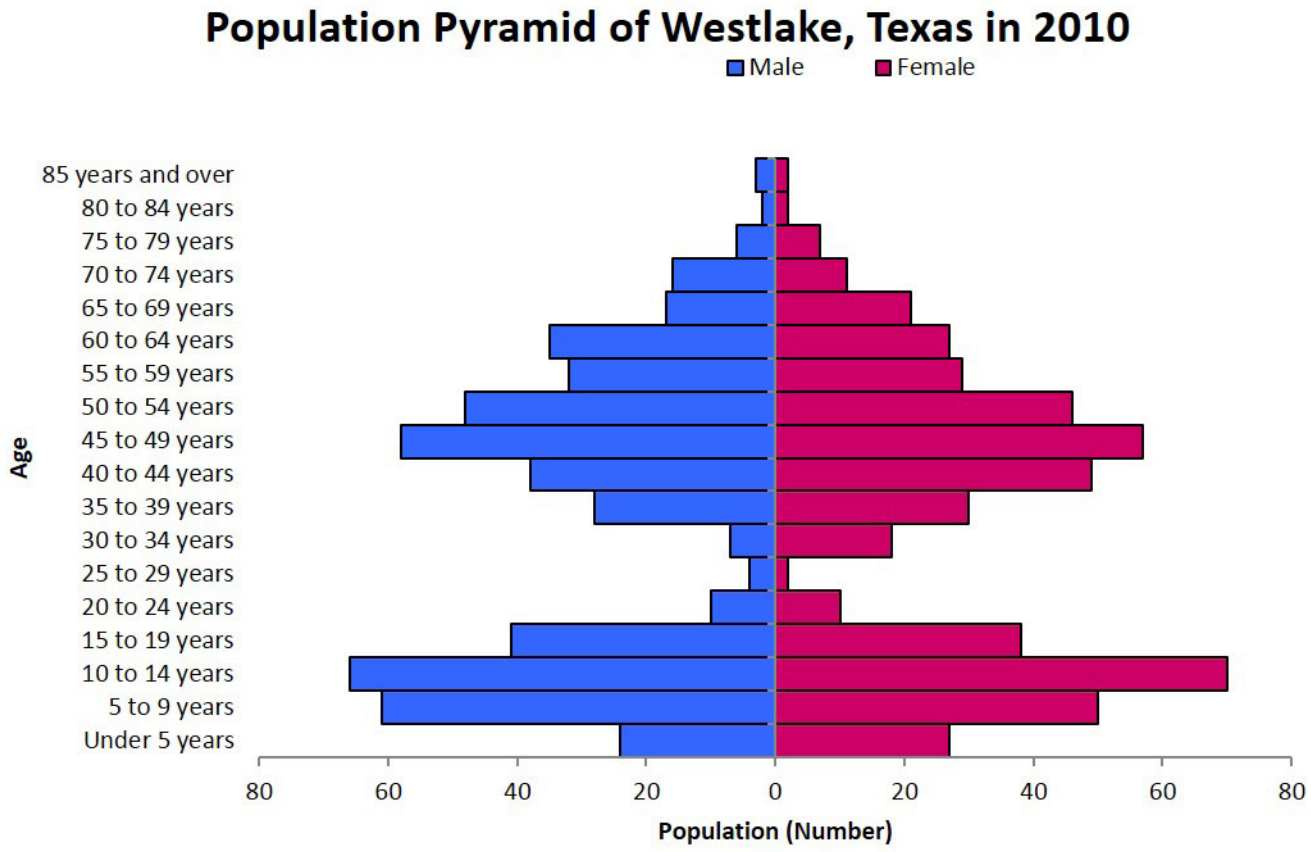


Figure 27: Population Pyramid

exemption, the gross number hides the true impact of such exemption. If we compare 2010 statistics to 2013 statistics, one can see that the numbers just do not add up without an alternative explanation. According to various studies, the Westlake resident student enrollment in 2010 was 139, not counting employee exemption or .46 students per household (139/302 = .46). When one does the same calculation for 2013, the result is .54 students per household (170 enrollees that are not admitted through employee or grandparent exemption/314 = .54). This is an extremely dramatic increase in the students per household over a very short period of time. The volatility of the numeric change suggests that using a simple "students-per-household" approach to projection could lead to an outcome that later data would not support. A more detailed explanation of the relationship of WR enrollees to number of households must be considered with a better understanding of the employee exemption and "grandparent exemption effect"

The average number of children per household with children in Westlake is 2.61 children (0-19) per household with the majority of households being husband and wife families (86.1% or 260 households). 2010 Census data also states that only 47.7% of the households have children (144 households). Therefore, the remaining significant number of households (116 households) are childless, husband and wife households or, more likely, empty nesters when one considers the dominant tapestry classifications discussed earlier.

Census information (as shown in Figure

ACS 2006-2010 data

Total population: 881

	Westlake, TX			Texas		U.S.	
	Total	Public	Private	Public	Private	Public	Private
Nursery School, Preschool, Kindergarten	58	53.45%	46.55%	75.63%	24.37%	69.28%	30.72%
Elementary School (Grades 1-8)	199	67.34%, see rank	32.66%, see rank	93.40%	6.60%	89.31%	10.69%
High School (Grades 9-12)	100	9.00%, see rank	91.00%, see rank	94.01%	5.99%	90.48%	9.52%
College	13	100.00%, see rank	0.00%, see rank	84.32%	15.68%	77.07%	22.93%
Graduate School	6	0.00%, see rank	100.00%, see rank	71.39%	28.61%	58.85%	41.15%

Figure 28: ACS 2006-2010 Data

27) suggests that 51% of the Westlake population is between 40 and 84. Therefore, 51% are beyond child bearing years while only 9% are between 25 and 39. ESRI also shows that the population is evenly split between men and women. Using the aforementioned 2.6 children per household (assuming 92 adults, age 25 to 39, in the present total population will translate to 46 households), the childbearing population would only produce 119 children, of which most will be age 5 to 9. The Westlake Academy enrollment for ages 5 to 9 is 127, of which 14 are documented as grandchildren and 27 are admitted under the employee exemption (or moved outside primary area), making the resident student total 86. This compares favorably with the 119 number, as some percentage will attend other schools and some are younger than 5 or older than 9. To have a census ratio of 11.2% of the total population being children ages 5 to 9 where the number of children in that age group equaled the 86 children currently enrolled at Westlake Academy (80% capture rate), the total population of children would have to be 416 or slightly more than the current population of children (391). The American Community Survey (ACS) data above in Figure 28 suggests that approximately 38% (in the grade 1-8 group) are attending private school. Assuming that only 20% of the younger children are attending private school, it would take a child (ages 5 to 9) population of 107 to fill the current enrollment. This number of children should be 28% of the total child population of 382. This compares favorably with the current 391 children number. Therefore, Westlake Academy is attracting 80% of the child age 5 to 9 population.

Most significant in Figure 27 is that 51% of the population is between the ages 40 and 84; and according to the Population Tapestry Analysis, this number may grow. According to Westlake Academy, 39% to 68% of Westlake households may have grandchildren. Such a high percentage of grandparents, 39% to 68%, is a wide range that compliments the Population Tapestry Analysis presented earlier in this section. The dominant tapestry analysis states that:

- The High Society LifeMode will grow 2% annually (nationally). Applying this rate of growth to Westlake 2010 Households (302), would bring the 2013 household total to 320 households or nearly the current number (314).
- The "Suburban Splendor" and "Boomburbs" households represent 71.2% of all households within a 3 mile radius of the Town Hall and comprise the largest percentage of the High Society LifeMode Neighborhood Group.

Figure 29: Westlake Academy

- The average ages of the people in these Tapestry Segment groups range between 35 to 64 years old.
- The 35 to 64 age group, living in husband and wife households are most likely to have older school age children (grade 6 through 12 and 91% of 9 through 12 attend private school) or be empty nester grandparents.
- The new home closings at the $1million + price point, projected by SDS, increase every year. This suggests that the influx of Social Splendor and Boomburb Tapestry groups will continue to dominate the Westlake market (as suggested in the earlier tapestry analysis) and such in-migration will mean more enrollees qualifying through the "Grandparent Exemption"
- The number of grandchildren per grandparent household is greater than the number of children per household; the somewhat asymptotic growth curve of WR enrollees per household (2010 =.46, and 2013=.54) is attributable to a greater number of grandparents with higher numbers of qualified enrollees per household as a result of the grandparent exemption.

If the now-empty-nester households have 2.6 children and their children have 2.6 children each, the potential enrollees per grandparent household could be 6.8 instead of the 2.6 (the number of children per household at Westlake's 144 households with children in 2010). Therefore, a projection for Westlake enrollment should look at the various Tapestry Segments within the community and use a rate per household that is based on its tapestry characteristics. Using lot size and proximity to commercial development as an indicator of price point, the smaller and commercially exposed lots will likely yield a home in the $500,000 to $800,000 range, while larger lots will continue to be over $1 million. The lower price point would be households having children under roof while the dominant percentage

UNITS	CONTEXT	PRICE POINT	COMMENT
704	When the location in the westerly portions of Westlake, in PD's with more than 500,000 sf. of commercial entitlement, and/ or 15,000sf. lots	$500,000-$700,000	Areas where tapestry analysis shoes expansion of "Upscale Avenues" Lifestyle Mode. These are younger families with children and income. Therefore, able to contribute resident enrollees to Westlake Academy. With 704 households times the number of households with children (assume 80%), times the children per household (2.6), times the percent of total in public school at k, 1-8, and 9-12 rates respectively. Total= 766 .
1116	When lots are between 20,000 and 2 acres and/ or located in easterly portions of Westlake, well isolated from Highway 114.	$700,000-$1million+	These lot developments are located in areas where the tapestry analysis shows a dominance of Suburban Splendor and Boomburbs segments. With 1116 households times the number of households with husband and wife (86.1%), times the grandchildren per household (adjusted from 6.7 to 5) for 35% of households and children per household for 50% of households, times the percent of total in public school at k, 1-8, and 9-12 rates respectively. Total=1500
103	Lots that are 2 acres or larger.	$1million+	Same participation as households with children at home = 95
TOTAL			2,362 at build out in 2036 at 11%*

Figure 30: Unit Price Point and Enrollment Trends

*this is a high grandchild analysis and is less than the SDS high growth scenario of 4,806 when projected out to 2036 at an annual growth rate of 14.5% (the rate illustrated on the enrollment growth projection graph in Figure 28), meaning that it falls somewhere between the high and moderate growth projections at 10.7%.

of higher price homes would potentially be empty nesters, bringing grandchildren to the school enrollment count. Figure 30 summarizes this approach and yields a projected public school student availability of 2,362 children.

Having factored out the private school portion of eligible children and assuming the Academy can attract 79.5% of the eligible public school children (2,362) to Westlake Academy, the total potential Westlake Academy enrollment (taking into account the potential "grandparent effect") would be 1,876 enrollees. This shows a potential increase of grandchildren eligible for enrollment from 7% today (14 grandchildren out of a WR enrollment of 184) to 17% (333 grandchildren out of a potential WR enrollment eligibility of 1,876). This would mean that 35% of the 963 grandchildren (grandchildren of the 1,116 households above) are attending Westlake Academy. This seems reasonable as many grandchildren will not live in the vicinity. However, somewhere between now and build-out, Westlake Academy will be at its maximum capacity (probably in the 1,200-1,500 student range, which is larger than St. Marks or Episcopal School of Dallas). The total number of school age children in the projected Westlake population (6,927 as defined by entitlement capacity) is 2,269, and the potentially eligible grandchildren are some portion of 963 (estimated at

POLICE SERVICE TODAY	
Westlake Population	1,000
Keller Population	41,000
Current Total police Service Population	42,000
Keller PD Sworn Officers	50
Keller Officers per 1,000 residents	1.2
National Average Officers per 1,000 residents	2.2

Figure 31: Police Service Today

POLICE SERVICE AT BUILD-OUT	
Westlake Additional Daytime Population	45,121
60% Population Reduction Due to Private Commercial Security	18,048
Current Keller PD Officers per 1,000 residents	1.2
Officers Needed at Current ratio	22
Westlake Build-out resident Population	6,846
National Average Officers per 1,000 residents	2.2
Officers Needed at National Ratio	15
Total Officers Needed at Build-out	37

Figure 32: Police Service at Build-Out

333) for a total of 2,602. This means that approximately half of the eligible enrollees will have to consider other options. Therefore, Westlake Academy will be faced with either a revision of present day enrollment policies and/or facility expansion.

Growth of Westlake Employment as a Result of Commercial Magnitude:
The number of city employees may grow substantially as the commercial entitlements of the Westlake Planned Development Ordinances (PD's) begin to go vertical. There are approximately 18,000,000 square feet of non-residential development entitlement embedded within the Westlake PD's (Hotel-2,210,000 sf., Office/ Industrial-13,314,980 sf., and Retail-3,127,368 sf.). The number of policemen and firemen required to adequately serve such a level of development significantly exceeds the number that a town population of 6,927 would typically require. The following charts present an approach to determination of the number of policemen and firemen needed to serve the build-out of Westlake. The number of firemen is attained by using a square foot per resident equivalent to determine the number of equivalent residents that the entitled non-residential square footage represents.

Using the above analysis as a basis of projecting future police and fire need, Westlake potentially requires 24 firemen and 37 policemen. However, the level of development imposes other considerations in determining this figure. These other considerations include:

- **Response time:** Generally 5 to 6 minute response times are desired. However, the ability to attain such a response time in a city with significant traffic choke points will be challenged (see Circulation Analysis). The total build-out of the non-residential and residential entitlements could generate as much

FIRE SERVICE TODAY	
Westlake Population	1,000
Population/ Residential Square Footage Equivalent	1,611
Westlake Non-residential Square Footage	1,995,000
Westlake Full-Time Firefighters	9
Westlake Firefighters per 1,000 residents	9
National Median (Pop.> 10,000 res.), Firefighters per 1,000 residents	1

Figure 33: Fire Service Today

FIRE SERVICE AT BUILD-OUT (Residential Equivalent Method)	
Commercial Square Footage at Build-out	18,000,000
Westlake Square Feet per Resident, Single Family Households	1,611
Commercial Equivalent Population at Single Family Household Conversion rate	11,173
National Median (Pop.>25,000 res.), Firemen per 1,000 residents	1.25
Firefighters Needed at National Ratio	14
Westlake Build-out Resident Population	6,846
National Median (Pop.> 10,000 res.), Firemen per 1,000 residents	1.2
Firefighters Needed at National Ratio (less than current ratio of 9/ 1,000 pop.)	9.3
Total Firefighters Needed at Build-out (using current 9 instead of 7)	24

Figure 34: Fire Service at Build-Out

as 300,000 vehicle trips per day in addition to the externally generated trips accessing SH 114 through Westlake. This may require more than one station, or at least a substation, which translates into additional employment. With an average of 12 firemen per station and 2 stations, Westlake will need 24 firemen (close to the number stated above).

- **Floor Area Ratio (horizontal spread of development):** The low building height (typically 5 to 6 stories) that would house non-residential square footage will spread development out over a large area that may require additional emergency personnel to adequately serve.
- **Support facilities (such as training facilities):** With the significantly more complex physical condition of such a large commercial center, more staff will may needed for training purposes.

In addition to emergency services, the general size of city administrative and public maintenance staff will also have to increase. If one assumes that city employment will look like Highland Park employment, then the total number of employees at build-out would be 120 (Highland Park total employees) less 60 (60 non-administrative public safety employees) for a net employment of 60, plus the 53 projected Westlake public safety employees, for a total Westlake employment of 113 employed in public safety (firemen and policemen). 113 employees is a 364% increase over the present employment of 31, not counting Westlake Academy.

Campus Isolation as a Result of Traffic Generation and Commercial Development: The final impact of population and commercial growth on Westlake Academy is the setting of its

location. The pastoral landscape that brackets the present academy site would see significant residential and commercial development. In addition, the Future Land Use Plan shows Westlake Academy being served by commercial streets as Dove Road is realigned (see Circulation Analysis). Therefore, attention must be paid to the view from, and character of, the roadway approaching Westlake Academy so that the pastoral setting is maintained.

CONCLUSION

This assessment has considered the issue of population and demographics and generally portrays a future of about 6,927 persons (the build-out capacity), which can be attained in approximately 2036. Most of this population will reside in households typifying the Suburban Splendor Tapestry Group; such demographic clustering will impact enrollment at Westlake Academy. In addition, the attainment of the build-out population in a context of high demand will appreciate property values and, thereby, possibly trigger a "stimulative condition", which could move the Town toward a state of instability. Finally, the $500,000 to $1 million+ housing market necessitates that a certain amount of contextual support exists in order to maintain property values. However, such a context, as it exists today, may be augmented by the high level of commercialization planned for the Town unless significant investment in a public domain that mitigates potential conflicts is made.