North Central Texas Council Of Governments

TO: Federal Highway Administration DATE: May 31, 2016

FROM: Karla Weaver
Program Manager

SUBJECT: Task 2d: Coordinating Demographic Projections

The purpose of this memo is to present the review of ways to better coordinate school district, local government, and regional demographic projections that was conducted by North Central Texas Council of Government (NCTCOG) staff in fulfillment of the terms of the 2014 Transportation Investment Generating Economic Recovery (TIGER) planning grant. The following section provides an overview of the TIGER grant that was awarded to NCTCOG, including the challenges it addresses, and the goals and accompanying tasks of the grant. Subsequent sections include an introduction to the role of demographic projections in school siting, an overview of school district, local government, and regional demographic projections, and recommendations on ways to better coordinate those projections.

BACKGROUND

The Dallas-Fort Worth (DFW) metroplex is one of the fastest growing metropolitan areas in the country, putting tremendous strain on the region's infrastructure—including transportation and school systems. The region's population is projected to increase from 7.2 million in 2017 to 10.7 million in 2040.[1] During this period, the number of school-age children (5 to 17 years) is estimated to increase by more than 750,000. There are currently 1,320,000 school-age children in the metroplex.[2] To accommodate this growth, hundreds of schools will need to be built or renovated. The location of those schools will have a tremendous impact on how children get to school and the region's transportation system overall.

Building upon previous coordination efforts with school districts in the region, the Regional Transportation Council (RTC) adopted a policy to support school districts in 2013. NCTCOG applied for and was awarded a 2014 TIGER planning grant. The goals of the grant are four-fold: (1) encourage interagency coordination; (2) address land use-transportation problems and school siting; (3) plan for transportation safety in school locations; and (4) plan for transportation options and accessibility. Various sub-tasks were identified to achieve each goal.

[1] NCTCOG 2040 Population Projections.
[2] U.S. Census Bureau. (2016). *S0101: Age and Sex, 2010-2014 American Community Survey 5-Year Estimates* [Data file].

616 Six Flags Drive, Centerpoint Two
P. O. Box 5888, Arlington, Texas 76005-5888
(817) 640-3300 FAX: 817-640-7806 ♻ recycled paper
www.nctcog.org

The second goal, "address land use-transportation problems and school siting," is supported by the follow sub-tasks:

a) Review state legislation and policies related to school siting requirements and land banking programs.
b) Research land banking programs and best practices.
c) Develop a framework for a program for planning, establishing, replenishing, and maintaining acquisition funds and/or land banking for school siting.
d) Coordinate independent school district (ISD), local government, and regional demographic projections for future demand for schools and housing.
e) Identify partnerships and funding sources.
f) Create summary memos resulting from research, review, and process conducted in items a through e, at the end of each sub-task.

This memo focuses on Task 2d, and the findings that resulted from the review of demographic projections.

THE ROLE OF DEMOGRAPHIC PROJECTIONS IN SCHOOL SITING

Demographic projections allow school districts to evaluate population trends that may impact future utilization of school facilities. These long-term projections help outline when and where new schools could be needed in the future.

The problem: Lack of Coordination between School District, Local Government, and Regional Demographic Projections

School districts operate independently from municipal and regional governments. Yet growth affects both. From a municipality's perspective, new homes require increased municipal services; and from a school district's perspective, new homes mean more children to educate. New schools and municipal services, in turn, attract more households. Thus, the actions of one entity influence the other. Despite this interdependence, coordination between school districts and local governments is limited.[3] One way to improve this coordination is to better align and share enrollment and population projection data. Furthermore, cities control land use and zoning, and receive platting and permits for new multi-family residential and single-family subdivisions; but it is important for school districts to be aware of these developments.

Often, school districts, local governments, and the regional government prepare separate demographic projections. The following sections review the purpose, frequency, and data used to prepare each of those projections in order to identify areas of alignment and potential resource sharing.

---

[3] The Oregon Transportation and Growth Management Program. (2005, June). Planning for schools and liveable communities: The Oregon school siting handbook. Retrieved from www.oregon.gov/lcd/tgm/docs/schoolsitinghandbook.pdf

SCHOOL DISTRICT DEMOGRAPHIC PROJECTIONS

In the short term, school districts use projections to inform staffing and budgeting decisions. In the longer-term, school districts conduct projections to better prepare for facility adjustments that may be necessary to accommodate potential student population shifts, the need for attendance boundary changes, and/or the construction of additional capacity. These projections typically have a horizon of 10 years, with data reported for each year within that horizon. The base data is the previous four to five years of student enrollment data, by campus. Data that informs the projections include student data provided by the school district, births, housing data (including starts and closing by housing type, and occupancy rates), ratio of students per household, employment trends, and growth and how fast it's occurring. Data supplied by cities often include building permits, planned subdivisions, multiple listing service (MLS) data, and apartment complexes projected for construction or to be demolished and replaced. City zoning ordinances guiding the location of residential development, and surrounding lot sizes and home sizes are important in assessing future residential development for vacant parcels.

The data is most often projected at the elementary school attendance boundary level, with the projections being reported at the campus level, by grade. However, some school districts such as Highland Park ISD also evaluate projections at the neighborhood or subdivision level. Small area projections such as this can be used to analyze demographic changes over time, independent of attendance boundary shifts. Fort Worth ISD groups elementary attendance zones into large zones (e.g., elementary schools in the central city or the west side of the city), making it easier to identify whether campus additions and/or attendance boundary adjustments should be made.

Also common among suburban districts with large areas of undeveloped land is the development of a "build-out" estimate, which allows for a bigger picture assessment of long-term site needs and location analysis. This method combines existing housing units, planned units, and potential units to estimate total dwelling units. The estimated total dwelling units at build-out are then combined with the district's average student per household ratios for single family versus multi-family housing units. Data on planned units are provided by city staff, and the location and amount of potential units can be ascertained by city zoning ordinances and future land use maps.

LOCAL GOVERNMENT DEMOGRAPHIC PROJECTIONS

Cities use population projections to plan for adequate housing, infrastructure, and services. The results of population projections can also guide priorities and policy decisions in order to better align future growth with the city's vision. In this way, cities more actively impact their growth projections, often during the comprehensive planning process. For example, as part of the development of *forwardDallas!*—the comprehensive plan for the City of Dallas—alternative

growth scenarios (one of which includes a "business as usual" form of development) were developed based on current trends and public input, with each analyzed to examine future growth and land use options. Ultimately, a preferred growth option was selected that reflects the desired future pattern of growth and development. Policies and strategies were then crafted to achieve that preferred growth scenario.

Based on a review of projections from various cities' comprehensive plans in the Dallas-Fort Worth region, projection horizons are typically 15 to 25 years in the future. Process and data can vary significantly. For example, the City of Frisco currently utilizes a three-path "range of possibilities" model, using growth rates of three percent, five percent and seven percent. The City's updated 2015 Comprehensive Plan estimates a population of 375,000± at build out based on the land use projections, with a population of 300,0000± by 2030 based on a five percent growth rate. The City of Plano projects population, race and ethnicity, and median age out to 2030 using extrapolated data from the Census Bureau for 1980 to 2010. The city estimates that population growth will level out at 300,000 (note: the NCTCOG projections indicate the city will increase to 342,686 by 2035.) For the City of Denton, the "business as usual" growth scenario in the Comprehensive Plan was derived from the report "Economic and Demographic Projections for the City of Denton: An Update" prepared by the Center for Economic Development and Research at the University of North Texas (2011). NCTCOG forecasted Denton's population to be 190,719 in 2030; however, the city believes Denton's growth will exceed this projection and reach 207,334 in 2030.[4] These variations among city processes highlight even more how cities and ISDs may not have similar data on not only the amount of growth but where the growth will occur, which affects student enrollment boundaries.

One unique example of a city coordinating with local school districts on estimating population and enrollment projections is the City of McKinney. As part of McKinney's Comprehensive Plan, the city, in coordination with the local school districts, estimated the impact of the Future Land Use Plan on the number of students in each school district at city build-out. The current functional capacities for schools were combined with the total number of students to determine the estimated number of schools that a district may need to provide in McKinney. The projections are intended to aid each school district as they plan for capital facilities by helping them to understand how McKinney's Future Land Use Plan impacts the growth in their district.[5]

REGIONAL DEMOGRAPHIC PROJECTIONS

The NCTCOG Demographic Forecast is developed to provide a uniform empirical base for infrastructure planning and resource allocations in the Metropolitan Planning Area. A summary

[4] The City of Denton, Texas. (2015). *Denton Plan 2030.* www.cityofdenton.com
[5] The City of McKinney, Texas. (2004). *McKinney Comprehensive Plan, Section 12: Educational Facilities and Services Element.* https://www.mckinneytexas.org/DocumentCenter/View/470

of the process that was used to obtain the population and employment projections for the most recent regional transportation plan, Mobility 2040, is as follows.

Control totals were developed for households, population, and employment, based on data acquired from an independent source (The Perryman Group). These projection totals were provided in five-year intervals from 2005 to 2040 at the county level, and served as a benchmark in the forecasting process.

Household, population, and employment totals were projected to 2040 by an independent source (The Perryman Group), using the Texas Econometric Model. These projection totals were provided in five-year intervals at the county level, which were then aggregated to obtain the regional control totals. From there the control totals were allocated to forecast districts using a Gravity Land Use Model (G-LUM)—a demand driven model in which employment leads to residential location. The district figures served as controls for the Traffic Survey Zone (TSZ) projections developed in the third step of the NCTCOG forecasting process.

Forecast district figures were disaggregated to TSZs using the UPlan, an urban growth GIS modeling tool. Within the region's 12 counties, there are 232 forecast districts, and 5,252 TSZs. The following figures illustrate how the boundaries of TSZs compare with Dallas ISD's elementary school attendance zones in the Oak Cliff neighborhood of Dallas.

Figure 1. Traffic Survey Zones

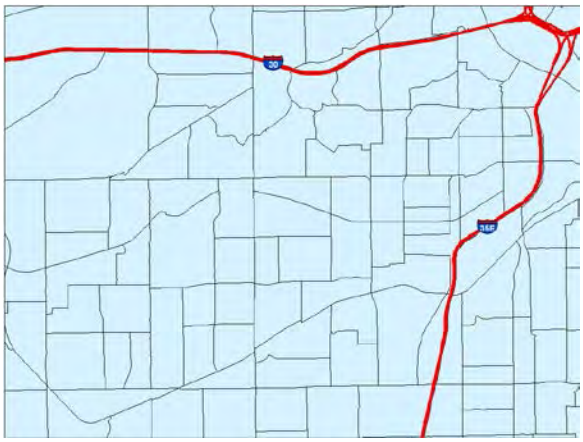
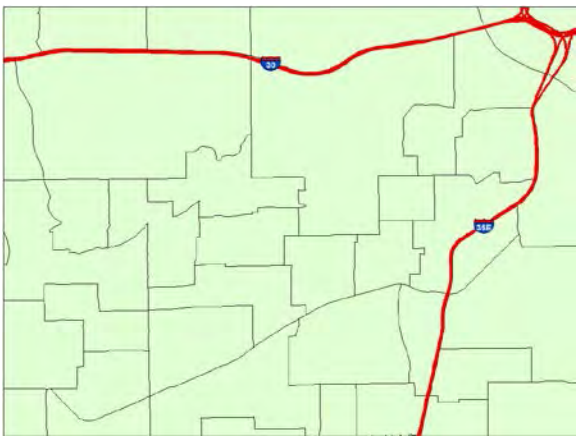


Figure 2. Elementary Attendance Zones[6]



NCTCOG household projections may or may not be incorporated into municipal and ISD household and population projections. The comparisons are important as future prioritization decisions of infrastructure investment are being made by all groups.

[6] Dallas ISD. (2016). GIS data: 2015-16 elementary attendance boundaries [data file]. Retrieved from http://www.dallasisd.org/Page/29132

SUMMARY, RECOMMENDATIONS, AND NEXT STEPS

Significant findings from the review of local agency demographic projections are as follows:

- School district have the shortest projection horizon (10 years) and the most frequent interim reporting (annual).
- Annual fluctuations in enrollment are much more significant to school districts than neighborhood population fluctuations are to local and regional governments. Under state law, school districts must seek a waiver from the state for elementary classrooms with more than 22 students. Therefore, sudden changes in market conditions or housing supply can cause a school district to acquire portable classrooms, adjust attendance boundaries, or construct a new school facility in order to maintain small classroom sizes.
- Unlike school districts and the regional government—both of which provide infrastructure and services in reaction to projected growth—many cities take a much more proactive approach to planning the future, changing their policies to engender different future growth than that projected in current demographic projections.
- Areas of overlap:
    - Some cities and school districts, such as the City of Dallas and Dallas ISD, hire consultants to conduct high-level employment and housing trend analyses.
    - School districts and the regional government both monitor new developments.

Recommendations

School Districts:

- All school districts should conduct five to 10 year enrollment projections.
- School districts, in particular those in suburban and rural areas with significant undeveloped land should conduct build-out analyses for a bigger picture look at long-term development trends and potential site needs. This analysis should be conducted at the elementary attendance zone and at smaller areas, such as neighborhoods and subdivisions. The use of attendance zones allow for a familiar base of analysis; however if these attendance zones are also broken out into smaller areas for analysis, it could protect the data from boundary and district policy changes. The analysis should be conducted in consultation with the city's comprehensive plan and master thoroughfare plan, and the metropolitan transportation plan.
- School districts should meet periodically with local governments to understand speculative markets for new housing locations and the timing of various projects.

Local Governments:

The school district should be notified on any residential development proposals, applications for zoning changes, or thoroughfare plan modifications that could impact the district's build-out analysis or enrollment projections. In an ideal scenario, the city would forward all residential development proposals to the school district. The school district would forward that information

to their demographer, and the demographer would provide the district with an impact analysis of the proposed development. From there, the school district may either change their facility projections, or work with the developer and city staff to accommodate a new school site.

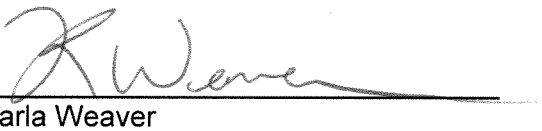
- Cities, early on as they see ISD projections for new facility locations, should review their CIP and other plans to evaluate if multimodal transportation improvements are planned at these locations or areas.

NCTCOG:

- Consider metrics of educational quality and capacity in regional population projections and modeling. Currently, NCTCOG's forecasting models include travel time and employment centers as major considerations for residential location. However, families base housing location decisions not merely by job location, but also school quality. Incorporating some metric of school quality and local school district facility capacity in the projections and modeling at the regional level could better inform the distribution of housing growth in the region and provide an opportunity for engaging school districts in regional planning. Aligning this data across agencies for a shared analysis and understanding is essential for moving forward on collaborative policies, planning, and programs.[7]

Next Steps

These findings will be presented along with others at NCTCOG's annual meeting of local government and school district elected officials; furthermore, NCTCOG staff will pursue continuing education of these issues to regional stakeholders. Subsequent memos prepared for Task 2 of the TIGER grant will further examine available funding sources and partnerships related to school siting and land banking.



Karla Weaver

KR:bw

[7] Center for Cities & Schools. (2011, June). Growth and opportunity: Aligning high-quality public education and sustainable communities planning in the Bay Area. University of California-Berkeley.