

COLLIN COUNTY MOBILITY PLAN ADDITIONAL DEMOGRAPHICS AND TRAVEL DEMAND MODELING SERVICES

BACKGROUND

During the development of the assumptions for the 2014 Collin County Mobility Plan Update, several constraints were considered in the estimating of growth in the far eastern and northern areas of Collin County. In particular, the following factors were considered as the Jacobs team worked with County staff to determine a reasonable build-out scenario for Collin County:

- State Highway 78 is one of the principal facilities to provide access between the east side of Lavon Lake and the west and south portions of the county;
- A new bridge over Lavon Lake has been previously removed from consideration as a solution to east-west capacity constraints;
- Water and sewer service to the eastern and northern portions of the county is not yet being planned; and
- The residents and leadership in the cities, towns and rural areas of far eastern and northern Collin County have emphatically opposed suburban development of these areas.

While the above constraints were considered to be reasonable at the time of the study, recent questions have been raised regarding how much transportation infrastructure would be needed if these constraints were removed, and the area developed in a manner similar to the western portions of Collin County.

In addition some of the cities may have revised their projections of the densities at which they will develop in the future. Any such changes will have an impact of travel demand in Collin County. Also the North Central Council of Governments has just completed updated demographic projections in preparation for the development of the regional 2040 Mobility Plan.

The purpose of this study is to provide several responses to the question, "What will it take to provide mobility in Collin County at build-out?" One alternative scenario (an alternative to that which has been provided in the 2014 Update of the Mobility Plan) needs to be developed based on possible increased densities of development in some cities, on removing the aforementioned water, sewer and transportation constraints and assuming the far eastern section of the county develops at the suburban levels found in the western half of the county.

TASK 1 PROJECT MANAGEMENT

Jacobs shall provide overall Project Management services in support of the study, including monthly progress reports, monthly invoicing, management of subconsultant efforts, and monitoring of project schedule and quality.

TASK 2 DEMOGRAPHIC AND LAND USE FORECASTS FOR AN ALTERNATE BUILD-OUT SCENARIO

Demographic forecasts will be developed for an alternative County build-out scenario beyond the previous build out scenario included in the 2014 Mobility Plan Update. This task will utilize the future land use plan developed for the County and all other existing data gathered for the 2014 Mobility Plan Update (e.g., TSZ structure and future land use maps). Modifications will be made to the land use assumptions and will be reflected on an alternative county future land use plan. Population projections will be revised and will be shown by TSZ. Employment projections will be revised and divided into basic, service, and retail categories and shown by TSZ.

2.1 Reconciliation of Base Data with NCTCOG

The consultant and the County staff will discuss with the appropriate staff at the North Central Texas Council of Governments (COG) the information that COG received during the development of the recent COG demographic projections. It is the County's desire that the information generated by COG complement the alternative build-out projection and any discrepancies should be resolved. However, if it is determined by the consultant and County staff that there is a sound basis for different projections than those prepared by COG, the consultant will use the projections generated by the consultant for this project and the reason for the difference with COG projections will be documented in an appendix or document other than the main report of this project.

2.2 Additional or Updated Data from Cities

From the discussion in Task 2.1 the County staff and the consultant will determine whether or not the information from the cities that was used in the CC 2014 Mobility Plan Update needs to be updated and from which cities updated information needs to be received. The consultant will contact the appropriate cities, meet with up to four (4) of those cities, and will obtain the necessary information to update the demographic projections of the Mobility Plan.

2.3 Basic Assumptions to Develop an Alternate Build-Out Scenario

The task will assume that development in eastern Collin County will closely resemble the density of development seen in western Collin County. Eastern Collin County density will be increased to levels comparable to western Collin County.

2.4 Traffic Survey Zone and Database Structure

This existing data will serve as the foundation and format for the projections. The final deliverables (i.e., one alternative ultimate population scenario projection by TSZ) will match the formatting and organization of the new 2040 projections by COG.

2.5 Collin County Future Land Use Map and Build-Out Projection

The Collin County Future Land Use Map will serve as the basis for projecting what vacant land will be used for in the future. TSZs will be reviewed for how vacant areas are planned to be developed (e.g., residential or commercial). Next, planning assumptions for population density or employment density will be applied (using either existing city comprehensive plan data, planning assumptions for areas not covered by a comprehensive plan, and updated planning assumptions) to determine the ultimate build-out of each TSZ.

2.6 Demographic and Land Use Database Development

Prepare an electronic database of population and employment projections for the alternate build-out scenario.

2.7 Meetings about Demographic and Land Use Forecasts

This task includes consultant team participation in up to ten (10) meetings.

- Kick-off meeting with County staff to review order and timing of tasks (afternoon before Planning Board meeting).
- Meeting with Planning Board to share and agree on land use assumptions (same day as staff kick-off meeting)
- Meeting with COG and County staffs to reconcile demographics
- Meeting with McKinney, subject to city staff availability
- Meeting with Frisco, subject to city staff availability
- Meeting with Celina, subject to city staff availability
- Meeting with a city to be determined, subject to city staff availability
- Present preliminary results to Planning Board

- Present final results to Planning Board
- Present results to Commissioners Court

2.8 Schedule

It is anticipated that the task will be completed within four (4) to six (6) months from the notice to proceed.

2.9 Deliverables

Collin County TSZ database of population and employment projections for one (1) alternate build-out scenario (i.e., no base year or forecast years are included in this scope of work), revised Future Land Use maps (Figure 15) for the build-out scenario included in this task, revised TSZ and city area map (Figure 16), and revised forecasts column chart (Figure 17), revised dot density maps (Figures 18 – 23B).

Following approval of the deliverables of Task 2 by Collin County, the Jacobs team will proceed with Task 3.

TASK 3 TRANSPORTATION MODEL CUSTOMIZED FOR COLLIN COUNTY

The services described in this task represent the activities necessary to coordinate, interpret, analyze, and supplement the travel demand model runs to be performed in coordination with NCTCOG. The services will be provided in close cooperation with the NCTCOG modeling group and the County. The goal is to expedite the modeling process and maximize the usefulness and analytical value of the travel demand model results for the additional transportation scenarios being explored after the mobility plan update.

3.1 Coordination with NCTCOG Modeling Support

It is anticipated that NCTCOG will provide travel demand modeling services (processing revised demographics and providing updated trip tables) for one or two scenarios (alternate build-out). The Jacobs Team will work with the County and NCTCOG to ensure that:

- NCTCOG Modeling Group receives input information and data inputs at a level of detail and in a format that will expedite the ability to apply the information within the modeling environment in a timely and expeditious fashion;
- Collin County receives the information needed from the model to fully explore the various options being analyzed and to determine the best course of action to achieving community goals and optimizing the county transportation system; and
- Communication between the project team and the NCTCOG modeling group is complete and effective in producing the level of mutual understanding necessary to meet project objectives and milestones.

NCTCOG has recently revised their travel demand model to reflect the Jacobs model. Jacobs will review the revised NCTCOG model to assure its conformity to the Jacobs model.

3.2 Build-Out Scenarios Traffic Forecasts

Using the trip tables obtained from the NCTCOG travel demand model runs as a starting point, the Jacobs Team will apply the NCTCOG traffic assignment model to develop traffic forecasts for the build-out scenario from the Collin County Mobility Plan Update and the alternate build-out scenario prepared in Task 1. The travel demand model network will be updated for these scenarios to include the road network of the Thoroughfare Plan. Under this task the Jacobs Team will:

- a. Review travel demand model coding recently performed by NCTCOG staff to verify that the Collin County roadway network of the Thoroughfare and Transit Plan has been added, and make additional revisions to the roadway network if needed;
- b. Connect the Outer Loop to IH 35 in Denton County and IH 30 in Rockwall County; and
- c. Apply the NCTCOG traffic assignment model to produce traffic forecasts for the two build-out scenario(s) for the following outputs for each scenario:
 - 1) Unconstrained condition to show what the demand is for each corridor and
 - 2) Level of service assuming the number of lanes in the Thoroughfare and Transit Plan

3.3 Deliverables

- a. Text for appropriate portions of the final Collin County Mobility Plan Update report describing the travel demand modeling effort, the results of that effort, and the usefulness of the data in the project;
- b. Tables documenting and interpreting the model output for use in technical memos, reports and brochures.
- c. Graphic exhibits in the form of statistical charts and thematic maps for inclusion in technical memos, reports and brochures, including a map ; and
- d. Large scale graphic exhibits in the forms of tables, thematic maps and charts.

3.4 Meetings about Model Results

This task includes consultant team participation in up to five (5) meetings (one overlapped with Task 1).

- Meet with Planning Board to explain steps in developing build-out travel demand models – same meeting as Task 1 final results
- Meet with COG staff to plan COG’s travel demand model run
- Present an interim report to County and COG staffs about the result of revising the model network to reflect the Thoroughfare Plan
- Present preliminary results of model runs, unconstrained and level of service, to County and COG staffs
- Present final results to Planning Board (information only; no action taken)
- Present final results to Commissioners Court (information only; no action taken)

TASK 4 ON-CALL TRANSPORTATION CONSULTATION

At the sole discretion of Collin County, the Engineer shall provide additional services, to include such services as on-call travel demand modeling, traffic analysis, transportation planning, alternatives analysis and conceptual design services. These services shall be documented via letter or e-mail correspondence, where the requested scope, fee and schedule, as negotiated by the County and the Engineer, is identified for each request. Payment terms for this work shall be in accordance with the overall contract payment terms.

PROPOSED FEE

<u>Task</u>	<u>Fee</u>
Task 1	\$ 6,056
Task 2	\$ 60,348
Task 3	\$ 81,325
TOTAL	\$ 147,729