

Demographic Sensitivity Analysis

With the anticipated future changes in travel patterns and financial issues in the region, NCTCOG staff conducted a series of demographic sensitivity analysis scenarios to quantitatively assess the potential impacts of alternative growth scenarios on the region. Within each scenario, households and employment were redistributed to simulate alternative market assumptions. A brief description of each of the scenarios is included below.

Rail Scenario – NCTCOG staff redistributed population and employment growth occurring between 2010 and 2030, while maintaining the population and employment control totals for the region. Growth was taken from rural areas of the region and added primarily to rail station areas.

Infill Scenario – NCTCOG staff redistributed population and employment growth occurring between 2010 and 2030, while maintaining the population and employment control totals for the region. Growth was taken from rural areas of the region and added primarily to infill areas along existing freeways/tollways.

Rail with County Control Totals (RCCT) Scenario – NCTCOG staff redistributed population and employment growth occurring between 2010 and 2030, while maintaining the population and employment control totals for the region and each individual county. Growth was taken from rural areas of the region and added primarily to rail-oriented areas.

Vision North Texas (VNT) Scenario – NCTCOG staff redistributed population and employment growth occurring between 2000 and 2030, while maintaining the population and employment control totals for the region. Growth was distributed based on overall Vision North Texas participant feedback.

Forward Dallas Scenario – Created for the City of Dallas, NCTCOG staff redistributed population and employment growth occurring between 2010 and 2030 based on the final alternative demographic dataset created during the Forward Dallas Comprehensive Plan process.

The Combination Scenario – Currently under development. This Scenario will redistribute population and employment growth occurring between 2010 and 2030 based on a set of sustainable development policies included in the Alternative Future Policy Program. The Combination Scenario will maintain the population and employment control totals for the region. Geographic redistribution of growth will focus on increasing densities in rail-oriented and infill zones.

The Exhibits, below, detail the potential benefits of each of the five completed scenarios to the region. Exhibit A illustrates the positive impacts of increased rail boardings on total VMT and Vehicle Hours Traveled (VHT). Exhibit B shows the financial and air quality benefits of each scenario when compared to the NCTCOG 2030 forecast. The variation in statistics from one scenario to another is dependent upon the total population and employment redistributed as well as the differences in areas altered by increases and decreases in demographic growth.

Exhibit A. Existing Scenarios: Statistics When Compared to NCTCOG 2030 Forecast Data

Data of Interest	Rail Scenario	Infill Scenario	RCCT Scenario	VNT Scenario	Forward Dallas!
MPA Average Trip Length	- 8%	- 3%	-0.01%	-10.85%	-2.9%
MPA Rail Transit Boardings	+ 52%	+ 9%	+8%	+11.13%	+7.4%
MPA Non-Rail Transit Boardings	+ 29%	+ 11%	+5%	+15.98%	+11%
MPA Vehicle Miles Traveled	- 6%	- 5%	-1.2%	-9.43%	-2.2%
MPA Vehicle Hours Traveled	- 9%	- 7%	-1.7%	-14.31%	-5.7%

Exhibit B. Existing Scenarios: Statistics When Compared to NCTCOG 2030 Forecast Data

Data of Interest	Rail Scenario	Infill Scenario	RCCT Scenario	VNT Scenario	Forward Dallas!
Total Vehicle Hours of Delay	- 24.0%	- 19.0%	-4.0%	- 32.5%	-14.5%
Lane Mile Needs	- 13.0%	- 10.0%	-13.3%	- 30.90%	-32.1%
Financial Needs (billions)	- \$12.1	- \$8.8	- \$2.9	- \$15.6	-\$7
Roadway Pavement Needs	- 8.3 sq. mi.	- 6.5 sq. mi.	-0.7 sq. mi.	-19.8 sq. mi.	-1.6 sq. mi.
NOx Emissions (Nitrogen Oxides)	- 4.1%	- 3.9%	- 1.2%	- 8.47%	-2.4%
VOC Emissions (Volatile Organic Compounds)	- 5.3%	- 5.2%	-1.5%	-11.02%	-3%