

## 2050 DEMOGRAPHIC FORECAST & MOBILITY PLAN LOCAL GOVERNMENT WORKSHOP

JULY 17, 2024

## AGENDA

### **Opening Remarks**

Dan Kessler, Assistant Director Transportation

### **Base Data**

Donna Coggeshall, Research Manager Research & Information Services

### Development of 2050 Population & Employment Control Totals

Dan Kessler

### **Forecast Methodology**

Mark Folden, Senior Predictive Analytics Specialist Research & Information Services

### Forecast Results & Alternative Scenario

Dan Kessler

### **Local Review Process**

Donna Coggeshall

### Mobility 2050



- Measures and locations of residential and commercial activity
  - Validation
  - Base data
- Developed or processed in the formats required by the models
- Geospatial data layers:
  - City limits, subdivisions, features, developments, employers, land use, and parks (developed by NCTCOG)
  - Parcels, hydrology, and statistical areas (processed by NCTCOG)
- Demographic and economic data:
  - Households, population, employment



City Limits + Subdivisions + Parks + Block Groups + Roads



Features & Developments + Land Use + Orthophotos + Transportation Analysis Zones

- NCTCOG's **Small Area Estimates Program** develops sub-county estimates of households, population, and employment.
- Estimates for 2019 were developed to add to a time series including 2000, 2005, 2010, and 2015.
- Small Area Estimates Program uses data from federal sources along with:
  - Other NCTCOG data, such as the geospatial data layers
  - NCTCOG's Annual Estimates Program (population and housing estimates)
  - Aerial imagery (orthophotos) available through NCTCOG's Spatial Data Cooperative Program

• County targets/controls are allocated to smaller geographies.

16 counties  $\rightarrow$  4,251 census block groups

- County data used as targets/controls:
  - Bureau of Economic Analysis data for employment
  - US Census Bureau and NCTCOG Annual Estimates for households and population
- For models, block group-level data are translated to about 27 million grid cells
- For local review and Travel Demand Model, grid-cell data are aggregated to Transportation Analysis Zones

 $\approx$ 27 million cells  $\rightarrow$  5,252 TAZ covering the 12 MPA counties

## **BASE DATA – SOURCES USED FOR ALLOCATION**

Employment	Households & Population
US Census LEHD Origin-Destination Employment Statistics	Decennial US Census Data
NCTCOG Major Employers	US Census Bureau Annual Estimates
NCTCOG Land Use	NCTCOG Annual Estimates
NCTCOG Features and Developments	NCTCOG Land Use
Parcel Data from Local Appraisal Districts	NCTCOG Features and Developments
SDCP Aerial Imagery	Parcel Data from Local Appraisal Districts
Nighttime Lights	NCTCOG Subdivisions
	SDCP Aerial Imagery

The geospatial data and the Small Area Estimates data are available through the Regional Data Center.

Regional Data Center											
NCTCOG Small Area Household and Population Estimates (2000 -	Showing 25 of 4,251 rows										
2015)	GEOID10	CNTYCODE	County	нноо	HH05	HH10	HH15	HHPop00	HHPop05	HHPop10	HHPop1
⊘ Authoritative	480,850,317,162	48,085	Collin	311	254	196	179	642	601	532	497
Regional Data Center NCTCOG North Central Texas Council of	480,850,304,061	48,085	Collin	189	268	371	386	714	1,008	1,425	1,125
Governments	(1) 480,850,317,181	48,085	Collin	290	298	301	277	792	779	767	722
Summary	480,850,317,093	48,085	Collin	647	596	541	515	1,494	1,389	1,298	1,259
Information and Analysis	480,850,317,061	48,085	Collin	369	369	364	335	1,106	1,051	1,003	943
View Full Details	480,850,313,134	48,085	Collin	209	502	613	714	607	1,576	2,113	2,445
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#### **Employment Forecasts - Texas**



Source: BEA CAEMP25S (1969-2000, SIC), BEA CAEMP25N (2001-2021, NAICS), NCTCOG, Woods & Poole Economics, The Perryman Group

Employment Forecasts - MPA



Source: BEA CAEMP25S (1969-2000, SIC), BEA CAEMP25N (2001-2021, NAICS), NCTCOG, Woods & Poole Economics, The Perryman Group

# **TOTAL EMPLOYMENT - MPA**

Source	2021	2045	2050	2060
BEA	5,423,995			
Derived		8,140,576	8,817,630	10,256,381
BEA Trend-polynomial		8,132,282	8,798,119	10,205,761
BEA Trend-linear		6,984,672	7,384,625	8,184,529
W&P 2022	5,368,786	8,963,802	9,853,002	11,879,958
Perryman		8,124,277	8,698,026	9,917,958

Source: BEA, NCTCOG, Woods & Poole Economics, The Perryman Group

# **TOTAL POPULATION BY PLANNING AREA**

#### Share of State Population (%)

Planning Area	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	Change in Share 1900 - 2020
AACOG	5.4	6.2	7.2	7.6	7.6	8.5	8.9	9.0	8.6	8.8	8.7	8.9	9.2	3.8
CAPCOG	7.3	5.8	5.0	4.4	4.3	4.0	3.6	4.0	4.6	5.4	6.5	7.3	8.3	1.0
H-GAC	8.6	8.3	9.2	10.8	13.2	15.3	17.7	20.6	23.0	22.9	23.3	24.2	25.0	16.4
NCTCOG	17.6	17.2	17.2	16.0	15.9	17.3	19.3	22.4	21.9	24.2	25.5	26.0	26.9	9.2
Balance of state	61.1	62.5	61.5	61.1	59.0	54.8	50.4	44.0	41.9	38.7	36.1	33.6	30.7	-30.4

Source: US Census Bureau, NCTCOG

Population Forecasts - Texas



Source: US Census Bureau, Texas Demographic Center, Woods & Poole Economics, The Perryman Group, NCTCOG

**Population Forecasts - MPA** 



Source: US Census Bureau, Texas Demographic Center, Woods & Poole Economics, The Perryman Group, NCTCOG

# **POPULATION - MPA**

Source	2022	2045	2050	2060
COG, CB	8,010,058			
Derived		11,766,002	12,654,777	14,522,714
CB, COG Trend - polynomial		11,778,002	12,682,840	14,594,747
CB, COG Trend - linear		10,301,109	10,854,954	11,962,646
TDC - 0.5		9,371,905	9,605,686	9,960,552
TDC - 1.0		10,751,826	11,359,906	12,531,338
W&P 2022		10,729,098	11,405,108	12,974,165
Perryman		11,529,041	12,429,673	14,390,517

Source: US Census Bureau, Texas Demographic Center, Woods & Poole Economics, The Perryman Group, NCTCOG

#### P/E Ratios from 1970 – 2060 MPA



Source: US Census Bureau, Bureau of Economic Analysis, Woods & Poole Economics, The Perryman Group, NCTCOG

Historical and Projected Population and Employment - MPA



Source: US Census Bureau, Bureau of Economic Analysis, The Perryman Group, NCTCOG

## RECOMMENDED MPA 2050 REGIONAL CONTROL TOTALS

	2022	2050 Control Total	2022 – 2050 Change	2022 – 2050 % Change
Population	8,010,058	12,429,673	4,419,615	55.2%
Employment	5,878,904	8,698,026	2,819,122	48.0%

<b>2050 Population/Employment Ratio</b>	1.43

Source: US Census Bureau, Bureau of Economic Analysis, The Perryman Group, NCTCOG



# FORECAST METHODOLOGY

## FORECAST METHODOLOGY

- Start with Small Area Estimates on 30x30m grid
- Create an inventory of grid cells available for development (SUPPLY)
  - Density determined by regression, area type, future land use plan
  - Does include some redevelopment
- Assign cells to density ranges based on base data

#### <u>Inputs</u>

**Small Area Estimates** 

**Control Totals** 

Future Land Use Plans

**GIS** Analysis

**Travel Model Output** 

## FORECAST METHODOLOGY

- Estimate number of grid cells from each range needed to absorb change in control totals
- Convert estimated number of grid cells for conversion based on nearby growth (DEMAND)
- Tabulate to TSZs
- Iterations annually within demographic model, periodically with Travel Demand Model (2019, 2026, 2035, 2045, 2050)

#### <u>Inputs</u>

**Small Area Estimates** 

**Control Totals** 

Future Land Use Plans

**GIS** Analysis

**Travel Model Output** 

# **DEVELOPMENT SUPPLY INVENTORY**

- Travel Model Interaction Variable
  - Residential
    - HH within 10 min
    - EMP within 30 min
    - Travel time to Employment Cluster TSZ
    - Trips ORIGINATING during AM peak per unit area of TSZ
  - Employment
    - HH within 30 min
    - EMP within 10 min
    - Travel time to Employment Cluster TSZ
    - Trips TERMINATING during AM peak per unit area of TSZ

- Static variables remain either as interpolated values, or as distances
  - Home Value Variables
    - Median Home Value
    - Distance to Census BG in 70<sup>th</sup> Percentile of Median Home Value
- Categorical
  - Land Use
  - County
- All non categorical variables are rescaled prior to machine learning so they are on equal footing with each other
  - Dependent and Independent

# **DEVELOPMENT DEMAND**

- Cells within each range of the development inventory are ranked based on growth since 2010
  - Subject to congestion indexes
- Estimated number of cells needed is converted from vacant to built
  - Redevelopment: increases density

- Ranking Variables
  - Residential
    - Change in Households within 2.5 miles
  - Nonresidential
    - Change in Employment within 1 mile (80%)
    - Change in Employment within 10 minutes (20%)







# OCELOT

<u>O</u>utlook for <u>C</u>hange in the <u>E</u>conomy and <u>L</u>and for

Outcomes in

 $\underline{\textbf{T}} ransportation$ 

- Recognizes a native Texas species
  - Ocelots have a wide range throughout the Americas
  - Endangered due to habitat decline
- Pays homage to the original 1950s work at CATS
  - Chicago Area Transportation Study



Photo: Larry Ditto via Texas Parks & Wildlife Magazine

## **ALTERNATIVE 2050 FORECAST**

- Extended current 2045 forecast to 2050
  - Explicitly controlled to econometric forecasts by County
- Determine annual growth from model for years 2019 to 2050
- Start with 2019 base data, add annual growth back in to 2050
- Not locally reviewed, and we are NOT asking for Local Review
- A development scenario to be used for testing, evaluation, and comparison

#### <u>Inputs</u>

**Small Area Estimates** 

Forecast 2045



# FORECAST RESULTS (PRELIMINARY)

### **COUNTY FORECAST TARGETS – POPULATION**

County	2019	2035	2050	2019 – 2050 Change	2019 – 2050 Percent Change	2019 – 2050 Compound Annual Growth Rate
Collin	1,036,595	1,613,969	2,158,340	1,121,745	108.2%	2.4%
Dallas	2,563,285	2,835,539	3,094,330	531,045	20.7%	0.6%
Denton	879,286	1,390,052	1,872,385	993,099	112.9%	2.5%
Ellis	187,453	324,747	452,132	264,679	141.2%	2.9%
Hood	59,934	112,725	162,845	102,911	171.7%	3.3%
Hunt	96,015	152,527	205,848	109,833	114.4%	2.5%
Johnson	174,456	275,089	368,962	194,506	111.5%	2.4%
Kaufman	140,490	234,441	321,673	181,183	129.0%	2.7%
Parker	144,367	263,189	374,523	230,156	159.4%	3.1%
Rockwall	104,942	177,129	245,395	140,453	133.8%	2.8%
Tarrant	2,061,041	2,484,544	2,877,012	815,972	39.6%	1.1%
Wise	67,174	120,815	171,552	104,378	155.4%	3.1%
MPA	7,515,038	9,984,765	12,304,997	4,789,959	63.7%	1.6%

### **COUNTY FORECAST TARGETS – EMPLOYMENT**

County	2019	2035	2050	2019 – 2050 Change	2019 – 2050 Percent Change	2019 – 2050 Compound Annual Growth Rate
Collin	661,917	968,540	1,256,073	594,155	89.8%	2.1%
Dallas	2,341,703	2,806,213	3,241,610	899,907	38.4%	1.1%
Denton	426,842	709,055	972,523	545,681	127.8%	2.7%
Ellis	86,847	141,142	190,122	103,275	118.9%	2.6%
Hood	30,736	51,156	70,391	39,655	129.0%	2.7%
Hunt	46,302	70,471	93,498	47,196	101.9%	2.3%
Johnson	79,358	123,112	163,066	83,708	105.5%	2.4%
Kaufman	56,647	101,043	143,654	87,007	153.6%	3.0%
Parker	69,500	116,462	162,348	92,848	133.6%	2.8%
Rockwall	54,991	94,844	132,965	77,974	141.8%	2.9%
Tarrant	1,323,107	1,739,802	2,128,073	804,966	60.8%	1.5%
Wise	35,786	54,309	72,161	36,375	101.6%	2.3%
МРА	5,213,736	6,976,148	8,626,482	3,412,747	65.5%	1.6%












### LARGEST CITIES – (PRELIMINARY)\*

**\*TABULATED WITH 2022 CITY LIMITS, EXCLUDES ETJ** 

Population					
City	2019	City	2035	City	2050
Dallas	1,281,778	Dallas	1,386,401	Dallas	1,485,246
Fort Worth	889,609	Fort Worth	1,098,030	Fort Worth	1,289,923
Arlington	387,191	Arlington	408,670	Frisco	450,825
Plano	280,583	Frisco	328,316	Arlington	428,050
Irving	252,171	Plano	305,771	McKinney	376,949
Garland	242,701	McKinney	284,179	Plano	329,611
Frisco	197,414	lrving	266,600	Denton	298,019
Grand Prairie	194,191	Garland	253,984	Irving	281,455
McKinney	185,714	Denton	215,835	Garland	264,486
Mesquite	148,756	Grand Prairie	210,754	<b>Grand Prairie</b>	226,423

### LARGEST CITIES – (PRELIMINARY)\*

**\*TABULATED WITH 2022 CITY LIMITS, EXCLUDES ETJ** 

Employment					
City	2019	City	2035	City	2050
Dallas	1,252,603	Dallas	1,444,716	Dallas	1,627,713
Fort Worth	600,135	Fort Worth	786,657	Fort Worth	959,608
Irving	317,127	Plano	384,627	Plano	453,481
Plano	309,915	Irving	376,499	Irving	433,208
Arlington	231,900	Arlington	257,471	Arlington	280,427
Richardson	191,421	Richardson	211,696	Denton	254,856
Garland	115,812	Denton	184,646	Richardson	230,232
Carrollton	114,189	Carrollton	155,973	Frisco	198,477
Denton	108,533	Garland	155,916	Carrollton	196,830
Grapevine	103,882	Frisco	150,491	McKinney	190,422

### ALTERNATIVE SCENARIO

### COUNTY TOTALS – 2050 (PRELIMINARY)

		Population	Difference		Employment	Difference
	OCLEOT	Allemanive	Difference	OCELOT	Allemative	Difference
Collin	2,158,340	2,011,885	-146,455	1,256,073	1,165,398	-90,675
Dallas	3,094,330	3,626,509	532,179	3,241,610	3,766,567	524,957
Denton	1,872,385	1,705,020	-167,365	972,523	761,656	-210,867
Ellis	452,132	361,450	-90,682	190,122	149,839	-40,283
Hood	162,845	104,019	-58,827	70,391	50,268	-20,123
Hunt	205,848	156,937	-48,911	93,498	73,269	-20,229
Johnson	368,962	283,426	-85,536	163,066	128,414	-34,652
Kaufman	321,673	244,503	-77,170	143,654	91,253	-52,401
Parker	374,523	266,015	-108,508	162,348	111,422	-50,926
Rockwall	245,395	182,037	-63,358	132,965	97,092	-35,873
Tarrant	2,877,012	3,226,995	349,983	2,128,073	2,215,794	87,722
Wise	171,552	112,684	-58,868	72,161	56,295	-15,866
MPA	12,304,997	12,281,480		8,626,482	8,667,267	

The Alternative scenario is based on the current 2045 Forecast, which differs in treatment of the control totals.







### LOCAL REVIEW PROCESS

### LOCAL REVIEW

- While the best available data were used, there are likely to be imperfections in the base-period data.
- Statistical modeling is inherently subject to various types of error.
- Local review provides additional information that NCTCOG staff can use to refine the forecasts.
- Focus of local review:
  - Correctable errors in the base data
  - Activity that has either occurred or is certain to occur, but was not captured by the models

### LOCAL REVIEW – WEB APP



### LOCAL REVIEW

- Review covers
  - Households, population, and employment
  - 2019 (base data) and 2035, 2050 (model output)
- Submitted information must be specific, detailed, and verifiable.
- NCTCOG staff will review all submissions and reconcile any conflicting inputs.
- Final data will reflect results of local review.

### Participation is strongly encouraged and much appreciated!

### **APPROXIMATE TIMELINE**

#### 2022 – 2023

Develop input data Determine control totals

#### January – June 2024

Develop draft forecasts

### July – August 2024

Local review

### September – October 2024

Incorporate local review

### October or November 2024

Seek Executive Board approval

### THANK YOU

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#### The Horse is out of the Barn

While it is essential to preserve and maintain homogeneous single family home neighborhoods, it is lunacy that low-density 1970s strip retail centers are not replaced with greater mixed-use density.

In June, when the North Central Texas Council of Governments (NCTCOG) announced the annual population estimates, we learned that Dallas-Fort Worth continues to grow at a brisk pace. The 16-county region added approximately 200,000 residents for an estimated population of almost 8.5 million. Rockwall (5.2%), Ellis (4.7%) and Collin (4.6%) counties led the region. They all have something in common: They are all suburban counties.

This growth outside the city centers follows a pattern we've seen developing for years: People have gravitated toward the suburbs, where developers can take advantage of building in unincorporated areas with large swaths of open land.

As we add residents and workers to fill the jobs created by our fast-growing economy, we need to examine how best to integrate them into a region that is expected to surpass 12 million people within 25 years. The new Mobility 2050 plan is being developed, and the horse is out of the barn.

As NCTCOG and the Regional Transportation Council (RTC) plan for 2050, the critical question is: Can local governments reduce congestion through land-use density, resulting in higher holding capacities and shorter trip lengths with a balance of jobs to housing? In other words, how can cities help reduce traffic congestion while providing opportunities for jobs and housing near the workplace?

The RTC is conducting a strategic review of public transportation authorities as part of the Transit 2.0 initiative. This initiative lays out a series of tasks to reimagine what our public transportation system will look like in a quarter-century. One of these tasks involves increased density around existing rail stations. So, we begin here.

**Increased development around rail stations and inside transit authority boundaries.** In the coming decades, we must continue to diversify our transportation system, relying more on public transportation and walkable communities. The issue is much of our growth is occurring outside the boundaries of our existing transit authorities. Through efforts like Transit 2.0, we can explore greater focus on passenger rail and land use.

**Infill development in the central cities and suburban downtowns.** A household in the urban center produces half the vehicle miles of travel of a rural household. If you support safety, air quality and walkable neighborhoods, infill is critical.

**Infill density in suburban cities.** By working with the cities and counties outside the urban core in rethinking development and providing additional transportation options, we can make it possible for people who want to rely less on their cars to do so. As those areas fill up, they could more readily support transit, walking and bicycling.

**Greater density and more mixed-use developments**. We also need more communities where people can live, work and play without having to get in and out of their cars.

**Integration of pedestrian facilities and trails and bicycle facilities within development**. The DFW Discovery Trail and Cotton Belt Regional Veloweb are connecting cities across the region via active transportation. These also provide opportunities for development accessible by bicyclists and pedestrians to passenger rail. The more connections we can create across modes, the more prepared our cities will be for future development.

**Integrated focus on housing choices for working families.** We should work with cities and developers to ensure that families have affordable housing options close to their jobs. Developments adding mixed-use options may be what some workers need to avoid long commutes.

**Development that matches housing values and employee income along transportation corridors.** We should pursue solutions that make it easier for people to live near work in the same corridor. This requires a jobs-housing balance that offers affordable options.

**Increased development in environmental justice and Title VI communities.** Not all communities have access to necessities such as education, telemedicine and food. NCTCOG is helping to close these gaps with technology, specifically the use of broadband as a transportation mode. Focus is placed on all Dallas-Fort Worth, regardless of income.

Using the same approach to density and setting communities up for a range of transportation options will help Dallas-Fort Worth navigate the challenges posed by growth far beyond 2050. High-speed rail efforts would also maximize speed, safety, air quality and urban density.

More efficient land-use location and increased housing choice can lower user transportation and public-sector infrastructure costs. Four million more friends are on the way. The increased pressure on taxpayers is not the solution. Urban density brings a higher quality of life for everyone.

Michael Morris, P.E. Director of Transportation North Central Texas Council of Governments Staff Director to the Regional Transportation Council

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#### <u>AGENDA</u>

#### Local Government 2050 Demographics and Mobility Plan Workshop Wednesday, July 17, 2024 3:00 PM – 4:00 PM (MTP) North Central Texas Council of Governments

- 1. Summary of Mobility 2045 Recommendations
- 2. Regional Effects of 2050 Demographic Forecast
- 3. Regional Area Type Changes
- 4. County Freeway/Thoroughfare Inventory Analysis
- 5. Considerations for Mobility 2050 Recommendations
- 6. Policy Discussion What does all this mean and what should we do about it?



### NCTCOG PRESENTATION **METROPOLITAN TRANSPORTATION PLAN** Effect of Current Demographic Trends on Transportation in 2050

Dan Lamers, PE and Brendon Wheeler, PE Local Government Workshop | 7.17.2024





















#### **2050** Level of Congestion/Delay (*New Baseline Forecast*)



MOBILITY 2050

# Metropolitan Planning Area (MPA)

	2023	2050	% Change
		"New Baseline"	(compared to 2023)
Population (in millions)	8.2	12.3	50%
Employment (in millions)	5.7	8.6	51%
Lane Miles	49,000	57,000	16%
Average Speed (mph)	34.0	30.3	-11%
Vehicle-Miles of Travel (Daily, in millions)	226.4	373.2	65%
Vehicle-Hours of Travel (Daily, in millions)	6.7	12.3	84%
Vehicle-Hours Spent in Delay (Daily, in millions)	1.8	4.4	144%
Cost of Delay (Annually, in billions)	\$13.2	\$32.3	145%





# Metropolitan Planning Area (MPA)

	2023	2050 "New Baseline"	% Change (compared to 2023)	2050 "Infill"*	% Change (compared to "New Baseline")
Population (in millions)	8.2	12.3	50%	12.3	0%
Employment (in millions)	5.7	8.6	51%	8.6	0%
Lane Miles	49,000	57,000	16%	57,000	0%
Average Speed (mph)	34.0	30.3	-11%	31.5	4%
Vehicle-Miles of Travel (Daily, in millions)	226.4	373.2	65%	346.8	-7%
Vehicle-Hours of Travel (Daily, in millions)	6.7	12.3	84%	11.0	-11%
Vehicle-Hours Spent in Delay (Daily, in millions)	1.8	4.4	144%	3.6	-18%
Cost of Delay (Annually, in billions)	\$13.2	\$32.3	145%	\$26.4	-18%



# Vehicle-Miles of Travel (VMT)

County	% Change in Activity (2023 to 2050)	2023 Daily VMT (thousands)	2050 Daily VMT (thousands)	% Change in VMT (2023 to 2050)
Collin	94%	27,800	54,300	95%
Dallas	17%	85,300	111,100	30%
Denton	93%	22,800	45,600	100%
Ellis	133%	7,800	15,500	99%
Hood	200%	1,700	3,600	112%
Hunt	50%	3,900	7,500	92%
Johnson	100%	4,600	9,500	107%
Kaufman	33%	6,500	14,900	129%
Parker	100%	4,600	10,400	126%
Rockwall	50%	2,800	7,200	157%
Tarrant	35%	55,100	87,000	58%
Wise	200%	3,400	6,600	94%
Total	<b>50</b> %	226,400	373,200	65%



\*Draft 2050 Forecast is based on "*New Baseline*" unless noted otherwise \*\*Activity represents population + employment RAI

# Vehicle-Hours of Travel (VHT)



	% Change in Activity	2023	2050	% Change in VHT
County	(2022+= 2050)	Daily VHT	Daily VHT	(2022 to 2050)
	(2023102030)	(thousands)	(thousands)	(2023 (0 2030)
Collin	94%	890	2,050	130%
Dallas	17%	2,770	3,590	30%
Denton	93%	680	1,720	153%
Ellis	133%	150	370	147%
Hood	200%	40	170	325%
Hunt	50%	70	150	114%
Johnson	100%	100	260	160%
Kaufman	33%	130	460	254%
Parker	100%	90	270	200%
Rockwall	50%	70	210	200%
Tarrant	35%	1,610	2,920	81%
Wise	200%	60	160	167%
Total	50%	6.660	12.320	85%



\*Draft 2050 Forecast is based on "*New Baseline*" unless noted otherwise \*\*Activity represents population + employment

# **Vehicle-Hours Spent in Delay**

County	% Change in Activity (2023 to 2050)	2023 Daily Delay (thousands)	2050 Daily Delay (thousands)	% Change in Delay (2023 to 2050)
Collin	94%	271	838	210%
Dallas	17%	854	1,134	33%
Denton	93%	199	762	282%
Ellis	133%	13	89	573%
Hood	200%	4	92	1982%
Hunt	50%	4	23	436%
Johnson	100%	8	64	734%
Kaufman	33%	17	194	1017%
Parker	100%	8	77	897%
Rockwall	50%	14	73	438%
Tarrant	35%	407	1,057	160%
Wise	200%	6	46	691%
Total	50%	1,805	4,448	146%



\*Draft 2050 Forecast is based on "*New Baseline*" unless noted otherwise \*\*Activity represents population + employment RAI







## 2023 Level of Service



### 2050 Level of Service

-51





121 TEXAS
### Area Type Changes

Area Type	2023 Land Area	2050 Land Area	Percent Change
1-Central Business District	0.05%	0.05%	0%
2-Outer Business District	0.70%	2.0%	186%
3-Urban Residential	12%	15%	25%
4-Suburban Residential	12%	19%	58%
5-Rural	75%	63%	-16%
Total	100%	100%	



	Household Changes				Population Changes			
Area Type	2023 Households (in thousands)	<b>2050 Household</b> (in thousands)	<b>Change</b> (in thousands)	Percent Change	<b>2023 Population</b> (in thousands)	<b>2050 Population</b> (in thousands)	<b>Change</b> (in thousands)	Percent Change
1-Central Business District	29	28	(1)	-3%	44	46	2	5%
2-Outer Business District	195	328	133	68%	392	780	388	99%
3-Urban Residential	1,715	2,378	663	39%	4,720	7,148	2,428	51%
4-Suburban Residential	614	1,152	538	88%	1,840	3,219	1,379	75%
5-Rural	406	433	27	7%	1,198	1,164	(34)	-3%
Total (rounded)	3,000	4,300	1,300		8,200	12,300	4,100	

\* Draft 2050 Forecast is based on "*New Baseline*" unless noted otherwise

\*\* Prior to local demographic forecast review

Employment Changes							
Area Type	2023 Employment (in thousands)	2050 Employment (in thousands)	<b>Change</b> (in thousands)	Percent Change			
1-Central Business District	341	325	(16)	-5%			
2-Outer Business District	1,104	1,911	807	73%			
3-Urban Residential	3,203	5,007	1,804	56%			
4-Suburban Residential	708	1,116	408	58%			
5-Rural	386	290	(96)	-25%			
Total (rounded)	5,700	8,600	3,100				



#### Template County\*



#### 30 miles x 30 miles

- Freeways (spacing  $\approx$  10 miles)
- Principal Arterials (spacing  $\approx$  3 miles)

Minor Arterials (spacing  $\approx$  1 mile)

\* Based on guidance from thoroughfare/freeway spacing studies calibrated to regional context



# Lane Miles (Freeways/Thoroughfares)

County	2023	2050	2050	% Difference
	Lane Miles	Lane Miles	Lane Miles /	from Template
			Square Mile	
Template*	9,100	9,100	10	-
Collin	3,500	5,100	6	-40%
Dallas	8,300	9,100	10	0%
Denton	2,500	3,500	4	-60%
Ellis	1,400	1,600	2	-80%
Hood	400	500	1	-90%
Hunt	1,300	1,400	2	-80%
Johnson	1,000	1,200	2	-80%
Kaufman	1,200	1,400	2	-80%
Parker	900	1,100	1	-90%
Rockwall	400	600	4	-60%
Tarrant	5,400	6,600	7	-30%
Wise	900	900	1	-90%

\*Based on guidance from thoroughfare/freeway spacing studies calibrated to regional context \*\*Draft 2050 Forecast is based on "*New Baseline*" unless noted otherwise



## Lane Miles and Vehicle-Miles of Travel (VMT) for Freeways/Thoroughfares

County	2023	2023	2050	2050	% Change	% Change
	Lane Miles	VMT	Lane Miles	VMT	Lane Miles	VMT
		(millions)		(millions)		
Collin	3,500	23.3	5,100	45.8	46%	97%
Dallas	8,300	71.5	9,100	91.8	10%	28%
Denton	2,500	19.2	3,500	38.0	40%	98%
Ellis	1,400	6.9	1,600	13.0	14%	88%
Hood	400	1.4	500	2.9	25%	107%
Hunt	1,300	3.7	1,400	7.0	8%	89%
Johnson	1,000	3.9	1,200	7.8	20%	100%
Kaufman	1,200	6.1	1,400	13.1	17%	115%
Parker	900	4.2	1,100	8.7	22%	107%
Rockwall	400	2.5	600	6.2	50%	148%
Tarrant	5,400	45.1	6,600	71.5	22%	59%
Wise	900	3.2	900	5.9	0%	84%















	2019 Population	2050 Population	2019 Employment	2050 Employment
Total	7.5 M	12.3 M	5.2 M	8.6 M
Within Transit Authority Boundaries	48%	37%	64%	55%
Outside Transit Authority Boundaries	52%	63%	36%	45%

### **Example Travel Behavior Considerations**

Remote Work

- Day of week/Time of day
- Live in region, work elsewhere
- Increasing distance between home and workplace

Automated vehicles influence

Reliability at 8 M vs. 12 M

Peak period spreading



### **Policy Discussion**

#### What is Transportation's Role?

Greater density through:

- Increased development around rail stations/within transit authority boundaries
- Infill in central cities and suburban downtowns
- More mixed-use developments, integrating pedestrian and bicycle facilities

Transportation for people, integrate jobs/housing balance into transportation planning by:

- Affordable housing options within proximity of jobs
- Developments matching housing values and incomes along transportation corridors
- Increased development within environmental justice and Title VI communities



### **CONTACT US**

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